SEQUENCE LISTING

<110> Ruvkun, Gary
        Kimura, Koutarou
        Patterson, Garth
        Ogg, Scott
        Paradis, Suzanne
        Tissenbaum, Heidi
        Morris, Jason
        Koweek, Allison

<120> THERAPEUTIC AND DIAGNOSTIC TOOLS FOR
    IMPAIRED GLUCOSE TOLERANCE CONDITIONS

<130> 00786/351005

<150> US 08/857,076
<151> 2000-08-03

<150> US 08/857,076
<151> 1997-05-15

<160> 114

<170> FastSEQ for Windows Version 4.0

<210> 1
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 1
cgctacggca aaaaagtgaa   20

<210> 2
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 2
cgatgatgaa gatacccc   18

<210> 3
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

```
<400> 3
tgatgcgaac ggcgatcgat                                                    20

<210> 4
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 4
acgctggatc atctacatta                                                    20

<210> 5
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 5
ggtttaatta cccaagtttg ag                                                 22

<210> 6
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 6
gctcacgggt cacacaacga                                                    20

<210> 7
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 7
tgatgcgaac ggcgatcgat                                                    20

<210> 8
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 8
tgagggccaa ctaaagaaga c                                                  21
```

<210> 9
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 9
cgctacggca aaaaagtgaa   20

<210> 10
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> Primer/probe derived from C. elegans

<400> 10
gacgatcccg aggtgagtat   20

<210> 11
<211> 5816
<212> DNA
<213> Caenorhabditis elegans

<220>
<221> misc_feature
<222> (1)...(5816)
<223> n = A,T,C or G

<400> 11
ggtttaatta cccaagtttg agctccaaga gcacacatct gatcgtcgga ttctactgta   60
ctccccgaaa aaccaacaaa aaacacaagt ttttgaacac ttgtaaatgc agacagaacg   120
atgacgagaa tgaatattgt cagatgtcgg agacgacaca aaattttgga aaatttggaa   180
gaagagaatc tcggcccgag ctgctcgtcg acgacttcaa caaccgctgc caccgaagct   240
ctcggaacaa ccactgagga tatgaggctt aagcagcagc gaagctcgtc gcgtgccacg   300
gagcacgata ttgtcgacgg caatcaccac gacgacgagc acatcacaat gagacggctt   360
cgacttgtca aaaattcgcg gacgcggcgt agaacgacgc ccgattcaag tatggactgc   420
tatgaggaaa acccgccatc acaaaaactt caataaatta ttcttggatt tctaaaaagt   480
catcaatgac gtcattaatg cttttactgc tattcgcttt tgtacagccg tgtgcctcaa   540
tagtcgaaaa acgatgcggc ccaatcgata ttcgaaatag gccgtgggat attaagccgc   600
aatggtcgaa acttggtgat ccgaacgaaa aagatttggc tggtcagaga atggtcaact   660
gcacagtggt ggaaggttcg ctgacaatct catttgtact gaaacacaag acaaaagcac   720
aagaagaaat gcatcgaagt ctacagccaa gatattccca agacgaattt atcacttttc   780
cgcatctacg tgaaattact ggaactctgc tcgtttttga gactgaagga ttagtggatt   840
tgcgtaaaat tttcccaaat cttcgtgtaa ttggaggccg ttcgctgatt caacactatg   900
cgctgataat ttatcgaaat ccggatttgg agatcggtct tgacaagctt tccgtaattc   960
gaaatggtgg tgtacggata atcgataatc gaaaactgtg ctacacgaaa acgattgatt   1020
ggaaacattt gatcacttct tccatcaacg atgttgtcgt tgataatgct gccgagtacg   1080
ctgtcactga gactggattg atgtgcccac gtggagcttg cgaagaggat aaaggcgaat   1140
caaagtgtca ttatttggag gaaaagaatc aggaacaagg tgtcgaaaga gttcagagtt   1200
gttggtcgaa caccacttgc caaaagtctt gtgcttatga tcgtcttctt ccaacgaaag   1260
aaatcggacc gggatgtgat gcgaacggcg atcgatgtca cgatcaatgc gtgggcggtt   1320
gtgagcgtgt gaatgatgcc acagcatgcc acgcgtgcaa gaatgtctat cacaagggaa   1380
agtgtatcga aaagtgtgat gctcacctgt accttctcct tcaacgtcgt tgtgtgaccc   1440
gtgagcagtg tctgcagctg aatccggtgc tctcgaacaa aacagtgcct atcaaggcga   1500

```
cggcaggcct ttgctcggat aaatgtcccg atggttatca aatcaacccg gatgatcatc    1560
gagaatgccg aaaatgcgtt ggcaagtgtg agattgtgtg cgagatcaat cacgtcattg    1620
atacgtttcc gaaggcacag gcgatcaggc tatgcaatat tattgacgga aatctgacga    1680
tcgagattcg cggaaaacag gattcgggaa tggcgtccga gttgaaggat atatttgcga    1740
acattcacac gatcaccggc tacctgttgg tacgtcaatc gtcaccgttt atctcgttga    1800
acatgttccg gaatttacga cgtattgagg caaagtcact gttcagaaat ctatatgcta    1860
tcacagtttt tgaaaatccg aatttaaaaa agctattcga ttcaacgacg gatttgacgc    1920
ttgatcgtgg aactgtgtca attgccaata acaagatgtt atgcttcaag tatatcaagc    1980
agctaatgtc aaagttaaat ataccactcg atccgataga tcaatcagaa gggacaaatg    2040
gtgagaaggn aatctgtgag gatatggcaa tcaacgtgag catcacagcg gtcaacgcgg    2100
actcggtctt ctttagttgg ccctcattca acattaccga tatagatcag cgaaagtttc    2160
tcggctacga gctcttcttc aaagaagtcc cacgaatcga tgagaacatg acgatcgaag    2220
aggatcgaag tgcgtgtgtc gattcgtggc agagtgtctt caaacagtac tacgagacgt    2280
cgaacggtga accgaccccg gacattttta tggatattgg accgcgcgag cgaattcggc    2340
cgaatacgct ctacgcgtac tatgtggcga cgcagatggt gttgcatgcc ggtgcgaaga    2400
acggtgtatc gaagattggt tttgtgagga cgagctacta tacgcctgat cctccgacgt    2460
tggcactagc gcaagtcgat tcggacgcta ttcatattac gtgggaagcg ccgctccaac    2520
cgaacggaga cctcacgcat tacacaatta tgtggcgtga gaatgaagtg agcccgtacg    2580
aggaagccga aaagttttgt acagatgcaa gcaccccgc aaatcgacaa cgcacgaaag    2640
atccgaaaga gacgattgta gccgataagc cagtcgatat tccgtcatca cgtaccgtag    2700
ctccgacact tttgactatg atgggtcacg aagatcagca gaaaacgtgc gctgcaacgc    2760
ccggttgttg ttcgtgttcg gctatcgaag aatcatcgga acagaacaag aagaagcgac    2820
cggatccgat gtcggcgatc gaatcatctg catttgagaa taagctgttg gatgaggttt    2880
taatgccgag agacacgatg cgagtgagac gatcaattga agacgcgaat cgagtcagtg    2940
aagagttgga aaaagctgaa aatttgggaa aagctccaaa aactctcggt ggaaagaagc    3000
cgctgatcca tatttcgaag aagaagccgt cgagcagcag caccacatcc acaccggctc    3060
caacgatcgc atcaatgtat gccttaacaa ggaaaccgac tacggtgccg ggaacaagga    3120
ttcggctcta cgagatctac gaacctttac ccggaagctg ggcgattaat gtatcagctc    3180
tggcattgga taatagttat gtgatacgaa atttgaagca ttacacactt tatgcgattt    3240
ctctatccgc gtgccaaaac atgacagtac ccggagcatc ttgctcaata tcccatcgtg    3300
cgggagcatt gaaacgaaca aaacacatca cagacattga taaagtgttg aatgaaacaa    3360
ttgaatggag atttatgaat aatagtcaac aagtcaacgt gacgtgggat ccaccgactg    3420
aagtgaatgg tggaatattc ggttatgttg taaagcttaa gtcaaaagtc gatggatcaa    3480
ttgttatgac gagatgtgtc ggtgcgaaga gaggatattc aacacggaat cagggtgtcc    3540
tattccagaa tttggccgat ggacgttatt ttgtctcagt aacggcgacc tctgtacacg    3600
gcgctggacc ggaagccgaa tcctccgacc caatcgtcgt catgacgcca ggcttcttca    3660
ctgtggaaat cattctcggc atgcttctcg tcttttgat tttaatgtca attgccggtt    3720
gtataatcta ctactacatt caagtacgct acggcaaaaa agtgaaagct ctatctgact    3780
ttatgcaatt gaatcccgaa tattgtgtgg acaataagta caatgcagac gattgggagc    3840
tacggcagga tgatgttgtg ctcggacaac agtgtggaga gggatcattc ggaaaagtgt    3900
acctaggaac tggaaataat gttgtttctc tgatgggtga tcgtttcgga ccgtgtgcta    3960
ttaagattaa tgtagatgat ccagcgtcga ctgagaatct caactatctc atggaagcta    4020
atattatgaa gaactttaag actaactta tcgtccaact gtacggagtt atctctactg    4080
tacaaccagc gatggttgtg atggaaatga tggatcttgg aaatctccgt gactatctcc    4140
gatcgaaacg cgaagacgaa gtgttcaatg agacggactg caactttttc gacataatcc    4200
cgagggataa attccatgag tgggccgcac agatttgtga tggtatggcg tacctggagt    4260
cgctcaagtt ttgccatcga gatctcgccg cacgtaattg catgataaat cgggatgaga    4320
ctgtcaagat tggagatttc ggaatggctc gtgatctatt ctatcatgac tattataagc    4380
catcgggcaa gcgtatgatg cctgttcgat ggatgtcacc cgagtcgttg aaagacggaa    4440
agtttgactc gaaatctgat gtttggagct cggagttgt tctctatgaa atggttacac    4500
tcggtgctca gccatatatt ggtttgagta atgatgaggt gttgaattat attggaatgg    4560
cccggaaggt tatcaagaag cccgaatgtt gtgaaaacta ttggtataag gtgatgaaaa    4620
tgtgctggag atactcacct cgggatcgtc cgacgttcct ccagctcgtt catcttctag    4680
cagctgaagc ttcaccagaa ttccgagatt tatcatttgt cctaaccgat aatcaaatga    4740
tccttgacga ttcagaagca ctggatcttg atgatattga tgatactgat atgaatgatc    4800
aggttgtcga ggtggcaccg gatgttgaga acgtcgaggt tcagagtgat tcggaacgtc    4860
ggaatacgga ttcaataccg ttgaaacagt ttaagacgat ccctccgatc aatgcgacga    4920
cgagtcattc gacaatatcg attgatgaga caccgatgaa agcgaagcag cgagaaggat    4980
```

```
cgctggatga ggagtacgca ttgatgaatc atagtggagg tccgagtgat gcggaagttc    5040
ggacgtatgc tggtgatgga gattatgtgg agagagatgt tcgagagaat gatgtgccaa    5100
cgcgacgaaa tactggtgca tcaacatcaa gttacacagg tggtggtcca tattgcctaa    5160
caaatcgtgg tggttcaaat gaacgaggag ccggtttcgg tgaagcagta cgattaactg    5220
atggtgttgg aagtggacat ttaaatgatg atgattatgt tgaaaaagag atatcatcca    5280
tggatacgcg ccggagcacg ggcgcctcga gctcttccta cggtgttcca cagacgaatt    5340
ggagtggaaa tcgtggtgcc acgtattata cgagtaaagc tcaacaggca gcaactgcag    5400
cagcagcagc agcagcagct ctccaacagc aacaaatgg  tggtcgaggc gatcgattaa    5460
ctcaactacc cggaactgga catttacaat cgacacgtgg tggacaagat ggagattata    5520
ttgaaactga accgaaaaat tatagaaata atggatctcc atcgcgaaac ggcaacagcc    5580
gtgacatttt caacggacgt tcggctttcg gtgaaaatga gcatctaatc gaggataatg    5640
agcatcatcc acttgtctga aacccccaaa aaatcccgcc tcttaaatta taaattatct    5700
cccacattat catatctcta cacgaatatc ggattttttt tcagattttt tctgaaaaat    5760
tctgaataat tttaccccat ttttcaaatc tctgtatttt tttttgttat tacccc        5816
```


<210> 12
<211> 1724
<212> PRT
<213> Caenorhabditis elegans

<400> 12
```
Met Thr Ser Leu Met Leu Leu Leu Leu Phe Ala Phe Val Gln Pro Cys
1               5                   10                  15
Ala Ser Ile Val Glu Lys Arg Cys Gly Pro Ile Asp Ile Arg Asn Arg
            20                  25                  30
Pro Trp Asp Ile Lys Pro Gln Trp Ser Lys Leu Gly Asp Pro Asn Glu
            35                  40                  45
Lys Asp Leu Ala Gly Gln Arg Met Val Asn Cys Thr Val Val Glu Gly
        50                  55                  60
Ser Leu Thr Ile Ser Phe Val Leu Lys His Lys Thr Lys Ala Gln Glu
65                  70                  75                  80
Glu Met His Arg Ser Leu Gln Pro Arg Tyr Ser Gln Asp Glu Phe Ile
                85                  90                  95
Thr Phe Pro His Leu Arg Glu Ile Thr Gly Thr Leu Leu Val Phe Glu
            100                 105                 110
Thr Glu Gly Leu Val Asp Leu Arg Lys Ile Phe Pro Asn Leu Arg Val
        115                 120                 125
Ile Gly Gly Arg Ser Leu Ile Gln His Tyr Ala Leu Ile Ile Tyr Arg
        130                 135                 140
Asn Pro Asp Leu Glu Ile Gly Leu Asp Lys Leu Ser Val Ile Arg Asn
145                 150                 155                 160
Gly Gly Val Arg Ile Ile Asp Asn Arg Lys Leu Cys Tyr Thr Lys Thr
                165                 170                 175
Ile Asp Trp Lys His Leu Ile Thr Ser Ser Ile Asn Asp Val Val Val
            180                 185                 190
Asp Asn Ala Ala Glu Tyr Ala Val Thr Glu Thr Gly Leu Met Cys Pro
        195                 200                 205
Arg Gly Ala Cys Glu Glu Asp Lys Gly Glu Ser Lys Cys His Tyr Leu
        210                 215                 220
Glu Glu Lys Asn Gln Glu Gln Gly Val Glu Arg Val Gln Ser Cys Trp
225                 230                 235                 240
Ser Asn Thr Thr Cys Gln Lys Ser Cys Ala Tyr Asp Arg Leu Leu Pro
                245                 250                 255
Thr Lys Glu Ile Gly Pro Gly Cys Asp Ala Asn Gly Asp Arg Cys His
            260                 265                 270
Asp Gln Cys Val Gly Gly Cys Glu Arg Val Asn Asp Ala Thr Ala Cys
```

-5-

```
                275                      280                      285
His Ala Cys Lys Asn Val Tyr His Lys Gly Lys Cys Ile Glu Lys Cys
    290                      295                      300
Asp Ala His Leu Tyr Leu Leu Leu Gln Arg Arg Cys Val Thr Arg Glu
305                      310                      315                      320
Gln Cys Leu Gln Leu Asn Pro Val Leu Ser Asn Lys Thr Val Pro Ile
                325                      330                      335
Lys Ala Thr Ala Gly Leu Cys Ser Asp Lys Cys Pro Asp Gly Tyr Gln
                340                      345                      350
Ile Asn Pro Asp Asp His Arg Glu Cys Arg Lys Cys Val Gly Lys Cys
                355                      360                      365
Glu Ile Val Cys Glu Ile Asn His Val Ile Asp Thr Phe Pro Lys Ala
                370                      375                      380
Gln Ala Ile Arg Leu Cys Asn Ile Ile Asp Gly Asn Leu Thr Ile Glu
385                      390                      395                      400
Ile Arg Gly Lys Gln Asp Ser Gly Met Ala Ser Glu Leu Lys Asp Ile
                405                      410                      415
Phe Ala Asn Ile His Thr Ile Thr Gly Tyr Leu Leu Val Arg Gln Ser
                420                      425                      430
Ser Pro Phe Ile Ser Leu Asn Met Phe Arg Asn Leu Arg Arg Ile Glu
                435                      440                      445
Ala Lys Ser Leu Phe Arg Asn Leu Tyr Ala Ile Thr Val Phe Glu Asn
                450                      455                      460
Pro Asn Leu Lys Lys Leu Phe Asp Ser Thr Thr Asp Leu Thr Leu Asp
465                      470                      475                      480
Arg Gly Thr Val Ser Ile Ala Asn Asn Lys Met Leu Cys Phe Lys Tyr
                485                      490                      495
Ile Lys Gln Leu Met Ser Lys Leu Asn Ile Pro Leu Asp Pro Ile Asp
                500                      505                      510
Gln Ser Glu Gly Thr Asn Gly Glu Lys Ala Ile Cys Glu Asp Met Ala
                515                      520                      525
Ile Asn Val Ser Ile Thr Ala Val Asn Ala Asp Ser Val Phe Phe Ser
                530                      535                      540
Trp Pro Ser Phe Asn Ile Thr Asp Ile Asp Gln Arg Lys Phe Leu Gly
545                      550                      555                      560
Tyr Glu Leu Phe Phe Lys Glu Val Pro Arg Ile Asp Glu Asn Met Thr
                565                      570                      575
Ile Glu Glu Asp Arg Ser Ala Cys Val Asp Ser Trp Gln Ser Val Phe
                580                      585                      590
Lys Gln Tyr Tyr Glu Thr Ser Asn Gly Glu Pro Thr Pro Asp Ile Phe
                595                      600                      605
Met Asp Ile Gly Pro Arg Glu Arg Ile Arg Pro Asn Thr Leu Tyr Ala
    610                      615                      620
Tyr Tyr Val Ala Thr Gln Met Val Leu His Ala Gly Ala Lys Asn Gly
625                      630                      635                      640
Val Ser Lys Ile Gly Phe Val Arg Thr Ser Tyr Tyr Thr Pro Asp Pro
                645                      650                      655
Pro Thr Leu Ala Leu Ala Gln Val Asp Ser Asp Ala Ile His Ile Thr
                660                      665                      670
Trp Glu Ala Pro Leu Gln Pro Asn Gly Asp Leu Thr His Tyr Thr Ile
                675                      680                      685
Met Trp Arg Glu Asn Glu Val Ser Pro Tyr Glu Glu Ala Glu Lys Phe
    690                      695                      700
Cys Thr Asp Ala Ser Thr Pro Ala Asn Arg Gln Arg Thr Lys Asp Pro
705                      710                      715                      720
Lys Glu Thr Ile Val Ala Asp Lys Pro Val Asp Ile Pro Ser Ser Arg
                725                      730                      735
Thr Val Ala Pro Thr Leu Leu Thr Met Met Gly His Glu Asp Gln Gln
```

-6-

```
              740                     745                     750
Lys Thr Cys Ala Ala Thr Pro Gly Cys Cys Ser Cys Ser Ala Ile Glu
          755                     760             765
Glu Ser Ser Glu Gln Asn Lys Lys Lys Arg Pro Asp Pro Met Ser Ala
      770                     775             780
Ile Glu Ser Ser Ala Phe Glu Asn Lys Leu Leu Asp Glu Val Leu Met
785                     790                     795                 800
Pro Arg Asp Thr Met Arg Val Arg Arg Ser Ile Glu Asp Ala Asn Arg
              805                     810                     815
Val Ser Glu Glu Leu Glu Lys Ala Glu Asn Leu Gly Lys Ala Pro Lys
          820                     825                     830
Thr Leu Gly Gly Lys Lys Pro Leu Ile His Ile Ser Lys Lys Lys Pro
          835                     840                     845
Ser Ser Ser Ser Thr Thr Ser Thr Pro Ala Pro Thr Ile Ala Ser Met
      850                     855                     860
Tyr Ala Leu Thr Arg Lys Pro Thr Thr Val Pro Gly Thr Arg Ile Arg
865                     870                     875                 880
Leu Tyr Glu Ile Tyr Glu Pro Leu Pro Gly Ser Trp Ala Ile Asn Val
              885                     890                     895
Ser Ala Leu Ala Leu Asp Asn Ser Tyr Val Ile Arg Asn Leu Lys His
          900                     905                     910
Tyr Thr Leu Tyr Ala Ile Ser Leu Ser Ala Cys Gln Asn Met Thr Val
          915                     920                     925
Pro Gly Ala Ser Cys Ser Ile Ser His Arg Ala Gly Ala Leu Lys Arg
      930                     935                     940
Thr Lys His Ile Thr Asp Ile Asp Lys Val Leu Asn Glu Thr Ile Glu
945                     950                     955                 960
Trp Arg Phe Met Asn Asn Ser Gln Gln Val Asn Val Thr Trp Asp Pro
              965                     970                     975
Pro Thr Glu Val Asn Gly Gly Ile Phe Gly Tyr Val Val Lys Leu Lys
          980                     985                     990
Ser Lys Val Asp Gly Ser Ile Val Met Thr Arg Cys Val Gly Ala Lys
          995                     1000                    1005
Arg Gly Tyr Ser Thr Arg Asn Gln Gly Val Leu Phe Gln Asn Leu Ala
      1010                    1015                    1020
Asp Gly Arg Tyr Phe Val Ser Val Thr Ala Thr Ser Val His Gly Ala
1025                    1030                    1035                104
Gly Pro Glu Ala Glu Ser Ser Asp Pro Ile Val Val Met Thr Pro Gly
              1045                    1050                    1055
Phe Phe Thr Val Glu Ile Ile Leu Gly Met Leu Leu Val Phe Leu Ile
          1060                    1065                    1070
Leu Met Ser Ile Ala Gly Cys Ile Ile Tyr Tyr Tyr Ile Gln Val Arg
          1075                    1080                    1085
Tyr Gly Lys Lys Val Lys Ala Leu Ser Asp Phe Met Gln Leu Asn Pro
      1090                    1095                    1100
Glu Tyr Cys Val Asp Asn Lys Tyr Asn Ala Asp Asp Trp Glu Leu Arg
1105                    1110                    1115                112
Gln Asp Asp Val Val Leu Gly Gln Gln Cys Gly Glu Gly Ser Phe Gly
              1125                    1130                    1135
Lys Val Tyr Leu Gly Thr Gly Asn Asn Val Val Ser Leu Met Gly Asp
          1140                    1145                    1150
Arg Phe Gly Pro Cys Ala Ile Lys Ile Asn Val Asp Asp Pro Ala Ser
          1155                    1160                    1165
Thr Glu Asn Leu Asn Tyr Leu Met Glu Ala Asn Ile Met Lys Asn Phe
      1170                    1175                    1180
Lys Thr Asn Phe Ile Val Gln Leu Tyr Gly Val Ile Ser Thr Val Gln
1185                    1190                    1195                120
Pro Ala Met Val Val Met Glu Met Met Asp Leu Gly Asn Leu Arg Asp
```

-7-

```
                 1205                    1210                    1215
Tyr Leu Arg Ser Lys Arg Glu Asp Glu Val Phe Asn Glu Thr Asp Cys
            1220                    1225                    1230
Asn Phe Phe Asp Ile Ile Pro Arg Asp Lys Phe His Glu Trp Ala Ala
            1235                    1240                    1245
Gln Ile Cys Asp Gly Met Ala Tyr Leu Glu Ser Leu Lys Phe Cys His
        1250                    1255                    1260
Arg Asp Leu Ala Ala Arg Asn Cys Met Ile Asn Arg Asp Glu Thr Val
1265                    1270                    1275                    128
Lys Ile Gly Asp Phe Gly Met Ala Arg Asp Leu Phe Tyr His Asp Tyr
            1285                    1290                    1295
Tyr Lys Pro Ser Gly Lys Arg Met Met Pro Val Arg Trp Met Ser Pro
            1300                    1305                    1310
Glu Ser Leu Lys Asp Gly Lys Phe Asp Ser Lys Ser Asp Val Trp Ser
            1315                    1320                    1325
Phe Gly Val Val Leu Tyr Glu Met Val Thr Leu Gly Ala Gln Pro Tyr
        1330                    1335                    1340
Ile Gly Leu Ser Asn Asp Glu Val Leu Asn Tyr Ile Gly Met Ala Arg
1345                    1350                    1355                    136
Lys Val Ile Lys Lys Pro Glu Cys Cys Glu Asn Tyr Trp Tyr Lys Val
            1365                    1370                    1375
Met Lys Met Cys Trp Arg Tyr Ser Pro Arg Asp Arg Pro Thr Phe Leu
            1380                    1385                    1390
Gln Leu Val His Leu Leu Ala Ala Glu Ala Ser Pro Glu Phe Arg Asp
        1395                    1400                    1405
Leu Ser Phe Val Leu Thr Asp Asn Gln Met Ile Leu Asp Asp Ser Glu
        1410                    1415                    1420
Ala Leu Asp Leu Asp Asp Ile Asp Asp Thr Asp Met Asn Asp Gln Val
1425                    1430                    1435                    144
Val Glu Val Ala Pro Asp Val Glu Asn Val Glu Val Gln Ser Asp Ser
            1445                    1450                    1455
Glu Arg Arg Asn Thr Asp Ser Ile Pro Leu Lys Gln Phe Lys Thr Ile
            1460                    1465                    1470
Pro Pro Ile Asn Ala Thr Thr Ser His Ser Thr Ile Ser Ile Asp Glu
        1475                    1480                    1485
Thr Pro Met Lys Ala Lys Gln Arg Glu Gly Ser Leu Asp Glu Glu Tyr
        1490                    1495                    1500
Ala Leu Met Asn His Ser Gly Gly Pro Ser Asp Ala Glu Val Arg Thr
1505                    1510                    1515                    152
Tyr Ala Gly Asp Gly Asp Tyr Val Glu Arg Asp Val Arg Glu Asn Asp
            1525                    1530                    1535
Val Pro Thr Arg Arg Asn Thr Gly Ala Ser Thr Ser Ser Tyr Thr Gly
            1540                    1545                    1550
Gly Gly Pro Tyr Cys Leu Thr Asn Arg Gly Gly Ser Asn Glu Arg Gly
        1555                    1560                    1565
Ala Gly Phe Gly Glu Ala Val Arg Leu Thr Asp Gly Val Gly Ser Gly
        1570                    1575                    1580
His Leu Asn Asp Asp Asp Tyr Val Glu Lys Glu Ile Ser Ser Met Asp
1585                    1590                    1595                    160
Thr Arg Arg Ser Thr Gly Ala Ser Ser Ser Ser Tyr Gly Val Pro Gln
            1605                    1610                    1615
Thr Asn Trp Ser Gly Asn Arg Gly Ala Thr Tyr Tyr Thr Ser Lys Ala
            1620                    1625                    1630
Gln Gln Ala Thr Ala Ala Ala Ala Ala Ala Ala Leu Gln Gln
        1635                    1640                    1645
Gln Gln Asn Gly Gly Arg Gly Asp Arg Leu Thr Gln Leu Pro Gly Thr
        1650                    1655                    1660
Gly His Leu Gln Ser Thr Arg Gly Gly Gln Asp Gly Asp Tyr Ile Glu
```

-8-

```
1665                      1670                      1675                      168
Thr Glu Pro Lys Asn Tyr Arg Asn Asn Gly Ser Pro Ser Arg Asn Gly
                    1685                      1690                      1695
Asn Ser Arg Asp Ile Phe Asn Gly Arg Ser Ala Phe Gly Glu Asn Glu
                1700                      1705                      1710
His Leu Ile Glu Asp Asn Glu His His Pro Leu Val
            1715                      1720
```

<210> 13
<211> 139
<212> PRT
<213> Caenorhabditis elegans

<400> 13
```
Thr Ser Gly Ser Gly Met Gly Pro Thr Thr Leu His Lys Leu Thr Ile
1               5                   10                  15
Gly Gly Gln Ile Arg Leu Thr Gly Arg Val Gly Ser Gly Arg Phe Gly
            20                  25                  30
Asn Val Ser Arg Gly Asp Tyr Arg Gly Glu Ala Val Ala Val Lys Val
            35                  40                  45
Phe Asn Ala Leu Asp Glu Pro Ala Phe His Lys Glu Thr Glu Ile Phe
        50                  55                  60
Glu Thr Arg Met Leu Arg His Pro Asn Val Leu Arg Tyr Ile Gly Ser
65                  70                  75                  80
Asp Arg Val Asp Thr Gly Phe Val Thr Glu Leu Trp Leu Val Thr Glu
                85                  90                  95
Tyr His Pro Ser Gly Ser Leu His Asp Phe Leu Leu Glu Asn Thr Val
            100                 105                 110
Asn Ile Glu Thr Tyr Tyr Asn Leu Met Arg Ser Thr Ala Ser Gly Leu
            115                 120                 125
Ala Phe Leu His Asn Gln Ile Gly Gly Ser Lys
        130                 135
```

<210> 14
<211> 62
<212> PRT
<213> Caenorhabditis elegans

<400> 14
```
Glu Asp Ala Ala Ser Asp Ile Ile Ala Asn Glu Asn Tyr Lys Cys Gly
1               5                   10                  15
Thr Val Arg Tyr Leu Ala Pro Glu Ile Leu Asn Ser Thr Met Gln Phe
            20                  25                  30
Thr Val Phe Glu Ser Tyr Gln Cys Ala Asp Val Tyr Ser Phe Ser Leu
            35                  40                  45
Val Met Trp Glu Thr Leu Cys Arg Cys Glu Asp Gly Asp Val
        50                  55                  60
```

<210> 15
<211> 31
<212> PRT
<213> Caenorhabditis elegans

<400> 15
```
Lys Pro Ala Met Ala His Arg Asp Ile Lys Ser Lys Asn Ile Met Val
```

```
     1                   5                     10                       15
Lys Asn Asp Leu Thr Cys Ala Ile Gly Asp Leu Gly Leu Ser Leu
              20                  25                      30


<210> 16
<211> 72
<212> PRT
<213> Caenorhabditis elegans

<400> 16
Ile Pro Tyr Ile Glu Trp Thr Asp Arg Asp Pro Gln Asp Ala Gln Met
 1                   5                     10                       15
Phe Asp Val Val Cys Thr Arg Arg Leu Arg Pro Thr Glu Asn Pro Leu
              20                  25                      30
Trp Lys Asp His Pro Glu Met Lys His Ile Met Glu Ile Ile Lys Thr
          35                  40                      45
Cys Trp Asn Gly Asn Pro Ser Ala Arg Phe Thr Ser Tyr Ile Cys Arg
       50                  55                  60
Lys Arg Met Asp Glu Arg Gln Gln
65                  70


<210> 17
<211> 150
<212> PRT
<213> Caenorhabditis elegans

<400> 17
Tyr Phe Glu Ser Val Asp Arg Phe Leu Tyr Ser Cys Val Gly Tyr Ser
 1                   5                     10                       15
Val Ala Thr Tyr Ile Met Gly Ile Lys Asp Arg His Ser Asp Asn Leu
              20                  25                      30
Met Leu Thr Glu Asp Gly Lys Tyr Val His Ile Asp Phe Gly His Ile
          35                  40                      45
Leu Gly His Gly Lys Thr Lys Leu Gly Ile Gln Arg Asp Arg Gln Pro
       50                  55                  60
Phe Ile Leu Thr Glu His Phe Met Thr Val Ile Arg Ser Gly Lys Ser
65                  70                  75                      80
Val Asp Gly Asn Ser His Glu Leu Gln Lys Phe Lys Thr Leu Cys Val
              85                  90                      95
Glu Ala Tyr Glu Val Met Trp Asn Asn Arg Asp Leu Phe Val Ser Leu
              100                 105                     110
Phe Thr Leu Met Leu Gly Met Glu Leu Pro Glu Leu Ser Thr Lys Ala
          115                 120                     125
Asp Leu Asp His Leu Lys Lys Thr Leu Phe Cys Asn Gly Glu Ser Lys
       130                 135                     140
Glu Glu Ala Arg Lys Phe
145                 150


<210> 18
<211> 113
<212> PRT
<213> Caenorhabditis elegans

<400> 18
Ser Pro Leu Asp Pro Val Tyr Lys Leu Gly Glu Met Ile Ile Asp Lys
```

-10-

```
        1                   5                        10                        15
Ala Ile Val Leu Gly Ser Ala Lys Arg Pro Leu Met Leu His Trp Lys
                    20                        25                        30
Asn Lys Asn Pro Lys Ser Asp Leu His Leu Pro Phe Cys Ala Met Ile
                    35                        40                        45
Phe Lys Asn Gly Asp Asp Leu Arg Gln Asp Met Leu Val Leu Gln Val
                    50                        55                        60
Leu Glu Val Met Asp Asn Ile Trp Lys Ala Ala Asn Ile Asp Cys Cys
65                            70                        75                        80
Leu Asn Pro Tyr Ala Val Leu Pro Met Gly Glu Met Ile Gly Ile Ile
                    85                        90                        95
Glu Val Val Pro Asn Cys Lys Thr Ile Phe Glu Ile Gln Val Gly Thr
                    100                       105                       110
Gly
```


```
<210> 19
<211> 106
<212> PRT
<213> Caenorhabditis elegans

<400> 19
Leu Ala Phe Val Trp Thr Asp Arg Glu Asn Phe Ser Glu Leu Tyr Val
 1                   5                        10                        15
Met Leu Glu Lys Trp Lys Pro Pro Ser Val Ala Ala Ala Leu Thr Leu
                    20                        25                        30
Leu Gly Lys Arg Cys Thr Asp Arg Val Ile Arg Lys Phe Ala Val Glu
            35                        40                        45
Lys Leu Asn Glu Gln Leu Ser Pro Val Thr Phe His Leu Phe Ile Leu
        50                        55                        60
Pro Leu Ile Gln Ala Leu Lys Tyr Glu Pro Arg Ala Gln Ser Glu Val
65                            70                        75                        80
Gly Met Met Leu Leu Thr Arg Ala Leu Cys Asp Tyr Arg Ile Gly His
                    85                        90                        95
Arg Leu Phe Trp Leu Leu Arg Ala Glu Ile
                    100                       105
```


```
<210> 20
<211> 139
<212> PRT
<213> Caenorhabditis elegans

<400> 20
Glu Tyr Trp Ile Val Thr Glu Phe His Glu Arg Leu Ser Leu Tyr Glu
 1                   5                        10                        15
Leu Leu Lys Asn Asn Val Ile Ser Ile Thr Ser Ala Asn Arg Ile Ile
                    20                        25                        30
Met Ser Met Ile Asp Gly Leu Gln Phe Leu His Asp Asp Arg Pro Tyr
            35                        40                        45
Phe Phe Gly His Pro Lys Lys Pro Ile Ile His Arg Asp Ile Lys Ser
        50                        55                        60
Lys Asn Ile Leu Val Lys Ser Asp Met Thr Thr Cys Ile Ala Asp Phe
65                            70                        75                        80
Gly Leu Ala Arg Ile Tyr Ser Tyr Asp Ile Glu Gln Ser Asp Leu Leu
                    85                        90                        95
Gly Gln Val Gly Thr Lys Arg Tyr Met Ser Pro Glu Met Leu Glu Gly
```

-11-

```
                  100                    105                      110
Ala Thr Glu Phe Thr Pro Thr Ala Phe Lys Ala Met Asp Val Tyr Ser
            115                    120                  125
Met Gly Leu Val Met Trp Glu Val Ile Ser Arg
        130                    135


<210> 21
<211> 61
<212> PRT
<213> Caenorhabditis elegans

<400> 21
Ile Gly Phe Asp Pro Thr Ile Gly Arg Met Arg Asn Tyr Val Val Ser
1                   5                   10                      15
Lys Lys Glu Arg Pro Gln Trp Arg Asp Glu Ile Ile Lys His Glu Tyr
            20                    25                    30
Met Ser Leu Leu Lys Lys Val Thr Glu Glu Met Trp Asp Pro Glu Ala
        35                    40                    45
Cys Ala Arg Ile Thr Ala Gly Cys Ala Phe Ala Arg Val
        50                    55                    60


<210> 22
<211> 20
<212> PRT
<213> Caenorhabditis elegans

<400> 22
Pro Ile Thr Asp Phe Gln Leu Ile Ser Lys Gly Arg Phe Gly Lys Val
 1                   5                   10                    15
Phe Lys Ala Gln
            20


<210> 23
<211> 163
<212> PRT
<213> Caenorhabditis elegans

<400> 23
Thr Asp Ser Glu Thr Arg Ser Arg Phe Ser Leu Gly Trp Tyr Asn Asn
1                   5                   10                  15
Pro Asn Arg Ser Pro Gln Thr Ala Glu Val Arg Gly Leu Ile Gly Lys
            20                    25                    30
Gly Val Arg Phe Tyr Leu Leu Ala Gly Glu Val Tyr Val Glu Asn Leu
        35                    40                    45
Cys Asn Ile Pro Val Phe Val Gln Ser Ile Gly Ala Asn Met Lys Asn
        50                    55                    60
Gly Phe Gln Leu Asn Thr Val Ser Lys Leu Pro Pro Thr Gly Thr Met
65                    70                    75                    80
Lys Val Phe Asp Met Arg Leu Phe Ser Lys Gln Leu Arg Thr Ala Ala
            85                    90                    95
Glu Lys Thr Tyr Gln Asp Val Tyr Cys Leu Ser Arg Met Cys Thr Val
            100                   105                   110
Arg Val Ser Phe Cys Lys Gly Trp Gly Glu His Tyr Arg Arg Ser Thr
            115                   120                   125
Val Leu Arg Ser Pro Val Trp Phe Gln Ala His Leu Asn Asn Pro Met
```

-12-

```
            130                      135                      140
His Trp Val Asp Ser Val Leu Thr Cys Met Gly Ala Pro Pro Arg Ile
145                      150                      155                      160
Cys Ser Ser


<210> 24
<211> 44
<212> PRT
<213> Caenorhabditis elegans

<400> 24
Arg Ala Phe Arg Phe Pro Val Ile Arg Tyr Glu Ser Gln Val Lys Ser
1               5                      10                      15
Ile Leu Thr Cys Arg His Ala Phe Asn Ser His Ser Arg Asn Val Cys
            20                      25                      30
Leu Asn Pro Tyr His Tyr Arg Trp Val Glu Leu Pro
            35                      40


<210> 25
<211> 38
<212> PRT
<213> Caenorhabditis elegans

<400> 25
Val Glu Tyr Glu Glu Ser Pro Ser Trp Leu Lys Leu Ile Tyr Tyr Glu
1               5                      10                      15
Glu Gly Thr Met Ile Gly Glu Lys Ala Asp Val Glu Gly His His Cys
            20                      25                      30
Leu Ile Asp Gly Phe Thr
            35


<210> 26
<211> 60
<212> PRT
<213> Caenorhabditis elegans

<400> 26
Asn Leu Ala Glu Thr Gly His Ser Lys Ile Met Arg Ala Ala His Lys
1               5                      10                      15
Val Ser Asn Pro Glu Ile Gly Tyr Cys Cys His Pro Thr Glu Tyr Asp
            20                      25                      30
Tyr Ile Lys Leu Ile Tyr Val Asn Arg Asp Gly Arg Val Ser Ile Ala
            35                      40                      45
Asn Val Asn Gly Met Ile Ala Lys Lys Cys Gly Cys
    50                      55                      60


<210> 27
<211> 20
<212> PRT
<213> Caenorhabditis elegans

<400> 27
Asp Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala Tyr Met Cys Arg Gly
```

```
                1                    5                    10                   15
                Asp Cys His Tyr
                        20


<210> 28
<211> 43
<212> PRT
<213> Caenorhabditis elegans

<400> 28
Val Cys Asn Ala Glu Ala Gln Ser Lys Gly Cys Cys Leu Tyr Asp Leu
1                   5                   10                  15
Glu Ile Glu Phe Glu Lys Ile Gly Trp Asp Trp Ile Val Ala Pro Pro
                20                  25                  30
Arg Tyr Asn Ala Tyr Met Cys Arg Gly Asp Cys
            35                  40


<210> 29
<211> 70
<212> PRT
<213> Caenorhabditis elegans

<400> 29
Asp Cys His Tyr Asn Ala His His Phe Asn Leu Ala Glu Thr Gly His
1                   5                   10                  15
Ser Lys Ile Met Arg Ala Ala His Lys Val Ser Asn Pro Glu Ile Gly
                20                  25                  30
Tyr Cys Cys His Pro Thr Glu Tyr Asp Tyr Ile Lys Leu Ile Tyr Val
            35                  40                  45
Asn Arg Asp Gly Arg Val Ser Ile Ala Asn Val Asn Gly Met Ile Ala
        50                  55                  60
Lys Lys Cys Gly Cys Ser
65                  70


<210> 30
<211> 35
<212> PRT
<213> Caenorhabditis elegans

<400> 30
Cys Cys Leu Tyr Asp Leu Glu Ile Glu Phe Glu Lys Ile Gly Trp Asp
1                   5                   10                  15
Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala Tyr Met Cys Arg Gly Asp
                20                  25                  30
Cys His Tyr
            35


<210> 31
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate probe
```

-14-

<221> misc_feature
<222> (1)...(23)
<223> n = A,T,C or G

<400> 31
ggntgggayt rnrtnrtngc ncc   23

<210> 32
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate probe

<221> misc_feature
<222> (1)...(18)
<223> n = A,T,C or G

<400> 32
tgytgynnnc cnacngar   18

<210> 33
<211> 127
<212> PRT
<213> Caenorhabditis elegans

<400> 33
Lys Phe His Glu Trp Ala Ala Gln Ile Cys Asp Gly Met Ala Tyr Leu
1   5   10   15
Glu Ser Leu Lys Phe Cys His Arg Asp Leu Ala Ala Arg Asn Cys Met
            20   25   30
Ile Asn Arg Asp Glu Thr Val Lys Ile Gly Asp Phe Gly Met Ala Arg
        35   40   45
Asp Leu Phe Tyr His Asp Tyr Tyr Lys Pro Ser Gly Lys Arg Met Met
    50   .   55   60
Pro Val Arg Trp Met Ser Pro Glu Ser Leu Lys Asp Gly Lys Phe Asp
65   70   75   80
Ser Lys Ser Asp Val Trp Ser Phe Gly Val Val Leu Tyr Glu Met Val
                85   90   95
Thr Leu Gly Ala Gln Pro Tyr Ile Gly Leu Ser Asn Asp Glu Val Leu
            100   105   110
Asn Tyr Ile Gly Met Ala Arg Lys Val Ile Lys Lys Pro Glu Cys
        115   120   125

<210> 34
<211> 131
<212> PRT
<213> Caenorhabditis elegans

<400> 34
Asn Thr Thr Cys Gln Lys Ser Cys Ala Tyr Asp Arg Leu Leu Pro Thr
1   5   10   15
Lys Glu Ile Gly Pro Gly Cys Asp Ala Asn Gly Asp Arg Cys His Asp
            20   25   30
Gln Cys Val Gly Gly Cys Glu Arg Val Asn Asp Ala Thr Ala Cys His
        35   40   45

-15-

```
Ala Cys Lys Asn Val Tyr His Lys Gly Lys Cys Ile Glu Lys Cys Asp
    50                  55                  60
Ala His Leu Tyr Leu Leu Leu Gln Arg Arg Cys Val Thr Arg Glu Gln
65                  70                  75                  80
Cys Leu Gln Leu Asn Pro Val Leu Ser Asn Lys Thr Val Pro Ile Lys
                85                  90                  95
Ala Thr Ala Gly Leu Cys Ser Asp Lys Cys Pro Asp Gly Tyr Gln Ile
            100                 105                 110
Asn Pro Asp Asp His Arg Glu Cys Arg Lys Cys Val Gly Lys Cys Glu
        115                 120                 125
Ile Val Cys
    130


<210> 35
<211> 103
<212> PRT
<213> Caenorhabditis elegans

<400> 35
Phe Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys
  1               5                  10                  15
Lys Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr
            20                  25                  30
Lys Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu
        35                  40                  45
Gln Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu
    50                  55                  60
Trp Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His
65                  70                  75                  80
Cys Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro
                85                  90                  95
Tyr His Tyr Glu Ile Val Ile
            100


<210> 36
<211> 79
<212> PRT
<213> Caenorhabditis elegans

<400> 36
Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val
  1               5                  10                  15
Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr
            20                  25                  30
Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val
        35                  40                  45
Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys
    50                  55                  60
Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
65                  70                  75


<210> 37
<211> 106
<212> PRT
<213> Caenorhabditis elegans
```

-16-

<400> 37
Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp Gly Asn Met Ser Tyr Ala
 1   5   10   15
Glu Leu Ile Thr Thr Ala Ile Met Ala Ser Pro Glu Lys Arg Leu Thr
            20   25   30
Leu Ala Gln Val Tyr Glu Trp Met Val Gln Asn Val Pro Tyr Phe Arg
        35   40   45
Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn Ser Ile Arg
    50   55   60
His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly
65   70   75   80
Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly
            85   90   95
Met Asn Pro Arg Arg Thr Arg Glu Arg Ser
            100   105

<210> 38
<211> 60
<212> PRT
<213> Caenorhabditis elegans

<400> 38
Glu Ile Lys Leu Ser Asp Phe Lys His Gln Leu Phe Glu Leu Ile Ala
 1   5   10   15
Pro Met Lys Trp Gly Thr Tyr Ser Val Lys Pro Gln Asp Tyr Val Phe
            20   25   30
Arg Gln Leu Asn Asn Phe Gly Glu Ile Glu Val Ile Phe Asn Asp Asp
        35   40   45
Gln Pro Leu Ser Lys Leu Glu Leu His Gly Thr Phe
    50   55   60

<210> 39
<211> 2784
<212> DNA
<213> Caenorhabditis elegans

<400> 39
atgaagctaa tagcaacttc tcttctagtt cccgacgagc acacaccgat gatgtcacca   60
gtgaatacaa ctacaaagat tctacaacgg agtggtatta aaatggaaat cccgccatat   120
ttggatccag acagtcagga tgatgacccg gaagatggtg tcaactaccc ggatccagat   180
ttatttgaca caaaaaacac aaatatgacc gagtacgatt ggatgtgtt gaagcttgga   240
aaaccagcag tagatgaagc acggaaaaag atcgaagttc ccgacgctag tgcgccgcca   300
aacaaaattg tagaatattt gatgtattat agaacgttaa aagaaagtga actcatacaa   360
ctgaatgcgt atcggacaaa acgaaatcga ttatcgttga acttggtcaa aaacaatatt   420
gatcgagagt cgaccaaaa agcttgcgag tccctggtga aaaaattgaa ggataagaag   480
aatgatctcc agaacctgat tgatgtggtt ctttcaaaag gtacaaaata taccggttgc   540
attacaattc caaggacact tgatggccgg ttacaggtcc acggaagaaa aggtttccct   600
cacgtagtct atggcaaact gtggaggttt aatgaaatga caaaaaacga aacgcgtcat   660
gtggaccact gcaagcacgc atttgaaatg aaaagtgaca tggtatgcgt gaatccctat   720
cactacgaaa ttgtcattgg aactatgatt gttgggcaga gggatcatga caatcgagat   780
atgccgccgc cacatcaacg ctaccacact ccaggtcggc aggatccagt tgacgatatg   840
agtagattta taccaccagc ttccattcgt ccgcctccga tgaacatgca cacaaggcct   900
cagcctatgc ctcaacaatt gccttcagtt ggcgcaacgt ttgcccatcc tctcccacat   960
caggcgccac ataacccagg ggtttcacat ccgtactcca ttgctccaca gacccattac   1020
ccgttgaaca tgaacccaat tccgcaaatg ccgcaaatgc cacaaatgcc accacctctc   1080
catcagggat atggaatgaa tgggccgagt tgctcttcag aaaacaacaa tccattccac   1140

-17-

```
caaaatcacc attataatga tattagccat ccaaatcact attcctacga ctgtggtccg    1200
aacttgtacg ggtttccaac tccttatccg gattttcacc atcctttcaa tcagcaacca    1260
caccagccgc cacaactatc acaaaaccat acgtcccaac aaggcagtca tcaaccaggg    1320
caccaaggtc aggtaccgaa tgatccacca atttcaagac cagtgttaca accatcaaca    1380
gtcaccttgg acgtgttccg tcggtactgt agacagacat ttggaaatcg attttttgaa    1440
ggagaaagtg aacaatccgg cgcaataatt cggtctagta acaaattcat tgaagaattt    1500
gattcgccga tttgtggtgt gacagttgtt cgaccgcgga tgacagacgg tgaggttttg    1560
gagaacatca tgccggaaga tgcaccatat catgacattt gcaagttcat tttgaggctc    1620
acatcagaaa gtgtaacttt ctcaggagag gggccagaag ttagtgattt gaacgaaaaa    1680
tggggaacaa ttgtgtacta tgagaaaaat ttgcaaattg gcgagaaaaa atgttcgaga    1740
ggaaatttcc acgtggatgg cggattcatt tgctctgaga atcgttacag tctcggactt    1800
gagccaaatc caattagaga accagtggcg tttaaagttc gtaaagcaat agtggatgga    1860
attcgctttt cctacaaaaa agacgggagt gtttggcttc aaaaccgcat gaagtacccg    1920
gtatttgtca cttctgggta tctcgacgag caatcaggag gcctaaagaa ggataaagtg    1980
cacaaagttt acggatgtgc gtctatcaaa acgtttggct tcaacgtttc caaacaaatc    2040
atcagagacg cgcttctttc caagcaaatg gcaacaatgt acttgcaagg aaaattgact    2100
ccgatgaatt atatctacga gaagaagact caggaagagc tgcgaaggga agcaacacgc    2160
accactgatt cattggccaa gtactgttgt gtccgtgtct cgttctgcaa aggatttgga    2220
gaagcatacc cagaacgccc gtcaattcat gattgtccag tttggattga gttgaaaatc    2280
aacattgcct acgatttcat ggattcaatc tgccagtaca taaccaactg cttcgagccg    2340
ctaggaatgg aagattttgc aaaattggga atcaacgtca gtgatgacta aatgataact    2400
tttttcactc accctactag atactgattt agtcttattc caaatcatcc aacgatatca    2460
aactttttcc tttgaacttt gcatactatg ttatcacaag ttccaagcag tttcaataca    2520
aacataggat atgttaacaa cttttgataa gaatcaagtt accaactgtt cattgtgagc    2580
tttgagctgt atagaaggac aatgtatccc atacctcaat ctttaatagt catcagtcac    2640
tggtcccgca ccaatttttt cgattcgcat atgtcatata ttgcaccgtg gccctttta    2700
ttgtaacttt taatatattt tcttcccaac ttgtgaatat gattgatgaa ccaccatttt    2760
gagtaataaa tgtatttttt gtgg                                           2784
```

<210> 40
<211> 796
<212> PRT
<213> Caenorhabditis elegans

<400> 40
```
Met Lys Leu Ile Ala Thr Ser Leu Leu Val Pro Asp Glu His Thr Pro
 1               5                  10                  15
Met Met Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly
            20                  25                  30
Ile Lys Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp
        35                  40                  45
Asp Pro Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr
    50                  55                  60
Lys Asn Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly
65                  70                  75                  80
Lys Pro Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala
                85                  90                  95
Ser Ala Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr
            100                 105                 110
Leu Lys Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg
            115                 120                 125
Asn Arg Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe
        130                 135                 140
Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys
145                 150                 155                 160
Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys
                165                 170                 175
Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln
```

-18-

```
              180                   185                      190
Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp
        195                   200               205
Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys
    210                   215               220
Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr
225                   230               235                   240
His Tyr Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His
                245               250                   255
Asp Asn Arg Asp Met Pro Pro Pro His Gln Arg Tyr His Thr Pro Gly
            260               265                   270
Arg Gln Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser
        275               280                   285
Ile Arg Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro
    290               295                   300
Gln Gln Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His
305               310                   315                   320
Gln Ala Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro
                325               330                   335
Gln Thr His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln
            340               345                   350
Met Pro Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly
        355               360                   365
Pro Ser Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His
    370               375                   380
Tyr Asn Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro
385               390                   395                   400
Asn Leu Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe
                405               410                   415
Asn Gln Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser
            420               425                   430
Gln Gln Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp
        435               440                   445
Pro Pro Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp
    450               455                   460
Val Phe Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu
465               470                   475                   480
Gly Glu Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe
                485               490                   495
Ile Glu Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro
            500               505                   510
Arg Met Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala
        515               520                   525
Pro Tyr His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser
    530               535                   540
Val Thr Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys
545               550                   555                   560
Trp Gly Thr Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys
                565               570                   575
Lys Cys Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser
            580               585                   590
Glu Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro
        595               600                   605
Val Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser
    610               615                   620
Tyr Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro
625               630                   635                   640
Val Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys
```

-19-

```
                     645                    650                    655
Lys Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
                660                    665                    670
Gly Phe Asn Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys
                675                    680                    685
Gln Met Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr
                690                    695                    700
Ile Tyr Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg
705                    710                    715                    720
Thr Thr Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys
                725                    730                    735
Lys Gly Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys
                740                    745                    750
Pro Val Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
                755                    760                    765
Ser Ile Cys Gln Tyr Ile Thr Asn Cys Phe Glu Pro Leu Gly Met Glu
                770                    775                    780
Asp Phe Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
785                    790                    795


<210> 41
<211> 858
<212> PRT
<213> Caenorhabditis elegans

<400> 41
Met Gly Asp His His Asn Leu Thr Gly Leu Pro Gly Thr Ser Ile Pro
 1                  5                    10                   15
Pro Gln Phe Asn Tyr Ser Gln Pro Gly Thr Ser Thr Gly Gly Pro Leu
                20                    25                    30
Tyr Gly Gly Lys Pro Ser His Gly Leu Glu Asp Ile Pro Asp Val Glu
                35                    40                    45
Glu Tyr Glu Arg Asn Leu Leu Gly Ala Gly Ala Gly Phe Asn Leu Leu
                50                    55                    60
Asn Val Gly Asn Met Ala Asn Val Pro Asp Glu His Thr Pro Met Met
65                    70                    75                    80
Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly Ile Lys
                85                    90                    95
Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp Asp Pro
                100                   105                   110
Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr Lys Asn
                115                   120                   125
Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly Lys Pro
                130                   135                   140
Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala Ser Ala
145                   150                   155                   160
Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr Leu Lys
                165                   170                   175
Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg Asn Arg
                180                   185                   190
Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe Asp Gln
                195                   200                   205
Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys Asn Asp
                210                   215                   220
Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys Tyr Thr
225                   230                   235                   240
Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln Val His
```

-20-

```
                   245                        250                          255
Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp Arg Phe
            260               265               270
Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys Lys His
        275               280               285
Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr His Tyr
        290               295               300
Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His Asp Asn
305               310               315                       320
Arg Asp Met Pro Pro Pro His Gln Arg Tyr His Thr Pro Gly Arg Gln
                325               330               335
Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser Ile Arg
            340               345               350
Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro Gln Gln
        355               360               365
Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His Gln Ala
        370               375               380
Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro Gln Thr
385               390               395                       400
His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln Met Pro
            405               410               415
Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly Pro Ser
            420               425               430
Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His Tyr Asn
        435               440               445
Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro Asn Leu
        450               455               460
Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe Asn Gln
465               470               475                       480
Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser Gln Gln
            485               490               495
Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp Pro Pro
            500               505               510
Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp Val Phe
        515               520               525
Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu Gly Glu
        530               535               540
Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe Ile Glu
545               550               555                       560
Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro Arg Met
            565               570               575
Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala Pro Tyr
            580               585               590
His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser Val Thr
        595               600               605
Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys Trp Gly
        610               615               620
Thr Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys Lys Cys
625               630               635                       640
Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser Glu Asn
                645               650               655
Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val Ala
            660               665               670
Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr Lys
        675               680               685
Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val Phe
        690               695               700
Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys Asp
```

```
        705                     710                      715                     720
Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe Gly Phe
                        725                     730                     735
Asn Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys Gln Met
                740                     745                     750
Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr Ile Tyr
                755                     760                     765
Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg Thr Thr
            770                     775                     780
Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly
785                     790                     795                     800
Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys Pro Val
                    805                     810                     815
Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp Ser Ile
                820                     825                     830
Cys Gln Tyr Ile Thr Asn Cys Phe Glu Pro Leu Gly Met Glu Asp Phe
                835                     840                     845
Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
    850                     855
```

<210> 42
<211> 892
<212> PRT
<213> Caenorhabditis elegans

<400> 42
```
Met Gly Asp His His Asn Leu Thr Gly Leu Pro Gly Thr Ser Ile Pro
  1                     5                      10                      15
Pro Gln Phe Asn Tyr Ser Gln Pro Gly Thr Ser Thr Gly Gly Pro Leu
                20                      25                      30
Tyr Gly Gly Lys Pro Ser His Gly Leu Glu Asp Ile Pro Asp Val Glu
            35                      40                      45
Glu Tyr Glu Arg Asn Leu Leu Gly Ala Gly Ala Gly Phe Asn Leu Leu
        50                      55                      60
Asn Val Gly Asn Met Ala Asn Glu Phe Lys Pro Ile Ile Thr Leu Asp
65                      70                      75                      80
Thr Lys Pro Pro Arg Asp Ala Asn Lys Ser Leu Ala Phe Asn Gly Gly
                85                      90                      95
Leu Lys Leu Ile Thr Pro Lys Thr Glu Val Pro Asp Glu His Thr Pro
            100                     105                     110
Met Met Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly
        115                     120                     125
Ile Lys Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp
    130                     135                     140
Asp Pro Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr
145                     150                     155                     160
Lys Asn Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly
                165                     170                     175
Lys Pro Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala
            180                     185                     190
Ser Ala Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr
        195                     200                     205
Leu Lys Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg
    210                     215                     220
Asn Arg Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe
225                     230                     235                     240
Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys
```

-22-

```
                        245                      250                         255
Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys
                260                      265                      270
Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln
                275                      280                      285
Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp
            290                      295                      300
Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys
305                      310                      315                      320
Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr
                325                      330                      335
His Tyr Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His
                340                      345                      350
Asp Asn Arg Asp Met Pro Pro His Gln Arg Tyr His Thr Pro Gly
            355                      360                      365
Arg Gln Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser
370                      375                      380
Ile Arg Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro
385                      390                      395                      400
Gln Gln Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His
                405                      410                      415
Gln Ala Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro
                420                      425                      430
Gln Thr His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln
                435                      440                      445
Met Pro Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly
            450                      455                      460
Pro Ser Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His
465                      470                      475                      480
Tyr Asn Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro
                485                      490                      495
Asn Leu Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe
            500                      505                      510
Asn Gln Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser
            515                      520                      525
Gln Gln Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp
            530                      535                      540
Pro Pro Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp
545                      550                      555                      560
Val Phe Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu
                565                      570                      575
Gly Glu Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe
            580                      585                      590
Ile Glu Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro
            595                      600                      605
Arg Met Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala
            610                      615                      620
Pro Tyr His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser
625                      630                      635                      640
Val Thr Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys
                645                      650                      655
Trp Gly Thr Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys
                660                      665                      670
Lys Cys Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser
            675                      680                      685
Glu Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro
            690                      695                      700
Val Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser
```

-23-

```
705                      710                      715                      720
Tyr Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro
                     725                     730                     735
Val Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys
                 740                     745                     750
Lys Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
             755                     760                     765
Gly Phe Asn Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys
         770                     775                     780
Gln Met Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr
785                     790                     795                     800
Ile Tyr Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg
                 805                     810                     815
Thr Thr Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys
             820                     825                     830
Lys Gly Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys
         835                     840                     845
Pro Val Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
     850                     855                     860
Ser Ile Cys Gln Tyr Ile Thr Asn Cys Phe Glu Pro Leu Gly Met Glu
865                     870                     875                     880
Asp Phe Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
                 885                     890
```

<210> 43
<211> 3499
<212> DNA
<213> Caenorhabditis elegans

<400> 43

```
tgatctttca agccgaagca atcaagacct caaagccaat caactctact cacttttctt        60
cagaacctta acttttgtg tcactttccc caaaaaccgt tcaagctgct gccttcactc       120
tcatcccctc ctcttactcc ttctttctcg tccgctacta ctgtatcttc tggacatcta       180
cctgtataca caccagtggc cagtcatctg ccattacaat ttcatcaatt gacacttctt       240
caacaacaac cgccgtcctc attcactccc gattcttcct catcctcaac atcgtcgtct       300
ttggctgaaa ttcccgaaga cgttatgatg gagatgctgg tagatcaggg aactgatgca       360
tcgtcatccg cctccacgtc cacctcatct gtttcgagat cggagcgga cacgttcatg       420
aatacaccgg atgatgtgat gatgaatgat gatatggaac cgattcctcg tgatcggtgc       480
aatacgtggc caatgcgtag gccgcaactc gaaccaccac tcaactcgag tcccattatt       540
catgaacaaa ttcctgaaga agatgctgac ctatacggga gcaatgagca atgtggacag       600
ctcggcggag catcttcaaa cgggtcgaca gcaatgcttc atactccaga tggaagcaat       660
tctcatcaga catcgtttct tcggagtttc agaatgtccg aatcgccaga cgataccgta       720
tcgggaaaaa agacaacgac cagacggaac gcttggggaa atatgtcata tgctgaactt       780
atcactacag ccattatggc tagtccagag aaacggttaa ctcttgcaca gtttacgaa       840
tggatggtcc agaatgttcc atacttcagg gataagggag attcgaacag ttcagctgga       900
tggaagaact cgatccgtca caatctgtct cttcattctc gtttcatgcg aattcagaat       960
gaaggagccg gaaagagctc gtggtgggtt attaatccag atgcaaagcc aggaatgaat      1020
ccacggcgta cacgtgaacg atccaatact attgagacga ctacaaaggc tcaactcgaa      1080
aaatctcgcc gcggagccaa gaagaggata aaggagagag cattgatggg ctcccttcac      1140
tcgacactta atggaaattc gattgccgga tcgattcaaa cgatttctca cgatttgtat      1200
gatgatgatc aatgcaagga gcatttgata acgttccatc atctttccgt ccccgaactc      1260
aatcgaacct ctcgattcct ggatcgtcgt ctcgtgtttc tccagctatt ggaagtgata      1320
tctatgatga tctagaattc ccatcatggg ttggcgaatc ggttccagca attccaagtg      1380
atattgttga tagaactgat caaatgcgta tcgatgcaac tactcatagt tggtggagtt      1440
cagattaagc aggagtcgaa gccgattaag acggaaccaa ttgctccacc accatcatac      1500
cacgagttga acagtgtccg tggatcgtgt gctcagaatc acttcttcg aaatccaatt      1560
gtgccaagca ctaacttcaa gccaatgcca ctaccgggtg cctatggaaa ctatcaaaat      1620
```

-24-

```
ggtggaataa ctccaatcaa ttggctatca acatccaact catctccact gcctggaatt    1680
caatcgtgtg gaattgtagc tgcacagcat actgtcgctt cttcatcggc tcttccaatt    1740
gatttggaaa atctgacact tcccgatcag ccactgatgg atactatgga tgttgatgca    1800
ttgatcagac atgagctgag tcaagctgga gggcagcata ttcattttga tttgtaaatt    1860
ctcttcattt tgtttcccct ggtgttgttc gaaagagaga tagcaaagca gcgaggagtg    1920
aggtaagcag caataaaaat tttggatttt tttttggttt ttccagaaat aatcgatttt    1980
ctggaaaatt tcaaaaaaaa atcggaattt ttagttaatt atttgatgag aaaaaaaaat    2040
tagaaaacat aaggaaaaat gaaaagcgtt tttttttttc gaaaatttta gaattctcct    2100
acatttccaa taagggcctt agaactgcaa acaaacaaaa attggaattt tcgaatcaaa    2160
aagttcccga ataaaagtag ttcgaatatt aaaaagcatt taatttcctc tttaaaaaaa    2220
ttgaataata gccgaaattt gcagattttt tttctgaaaa tcgaaaaacc aaaatttttt    2280
gatttttaa attttttttt tactttccag atagtaaaat cattagcact gaaaattatt    2340
tgaaaaaaaa cttcaaatac aaattttgtt ttcgaaaaaa aaaatttaaa tatatatttt    2400
cagaaatctt ccgtcttcat cttttcaaat ccctacctac acacactcaa cgatcatcac    2460
agccagacca tcaatattct tccaaatttt gacgtcgtta attttttttc agttttttca    2520
aaaactctat tttctatttt ctgtcgtttg ttcccctttc tctcgtctaa ttccaacaca    2580
ttcatcccag tgacgtcgtg taataataat ataaataacc tcttctctct ttcttcccct    2640
aatgcgaaat atcgaaaaac cgttgattat tacctctttt ttcttgtttt ttttttctct    2700
ctctctctcc cgtcatccag gttcttcact ctttaaatgc tacctctatc ccatcttttt    2760
cgctgtaaat ttgtttcgca atcaaaactg ctaaaacaca ttccccaatc tgtcttttttt    2820
aattgaattt ttcaaaaaat ttgatttctt gatttctctt gtaattcttt aattttcctc    2880
ttttttttcc ccctggtagc aaatgtctag cgattctctt tcttttttttg tttaactttc    2940
acatctggcc gattcgaatc ctccgtatac acacacacat agtaatctac ctccaaaatt    3000
ttactgaaag atgtgatccc ctctctgtct ccctctacaa aacattattt gtctgtttgt    3060
gtatattgcc accacgtcga ttttaaatta aaaccatcgt tttttcttct tttctacttt    3120
tttctcgaaa aatttaacaa cacacaaaaa aatccttcaa aaaatctcag ttttaaatgg    3180
tgtggcaata tatcggatcc ccctctacac cagaacagtc ttgcaatttc agagaatgat    3240
tttcagattt ttcatatcac aggccccctt tttttgcttg ttttttttctc tacctctctt    3300
tcttttcatt ctatttctct ctcttgtttt ctctctgtta tcctgtacat tttccttcca    3360
attctttctg gctatttctg attttcgagt tcatattctc tacgtctcac tttctctcgc    3420
gccacgcccc cttttttcgtc tccctccgcc cccaaatata tttgcgactg tatgatgatg    3480
atgatgattt aataaaaat                                                  3499

<210> 44
<211> 2704
<212> DNA
<213> Caenorhabditis elegans

<400> 44
ttacacgtgg ccaatgcaac aatacatcta tcaggaatcg tcagcaacca ttccccatca      60
ccatttaaat caacacaaca atccgtatca tccaatgcat cctcatcatc aattacctca     120
tatgcaacaa cttcctcaac ctctattgaa tcttaacatg acgacgttaa catcttctgg     180
cagttccgtg gccagttcca ttggaggcgg agctcaatgc tctccgtgcg cgtcgggctc     240
ctcgaccgct gcaacaaatt cctctcaaca gcagcagacc gttggtcaaa tgcttgctgc     300
atcggtgcct tgttcttcat ctggcatgac acttggaatg tcacttaatc tgtcacaagg     360
cggtggtcca atgccggcaa aaaagaagcg ttgtcgtaag aagccaaccg atcaattggc     420
acagaagaaa ccgaatccat ggggtgagga atcctattcg gatatcattg ccaaagcatt     480
ggaatcggcg ccagacggaa ggcttaaact caatgagatt tatcaatggt tctctgataa     540
tattccctac tttggagaac gatctagtcc cgaggaggcc gccggatgga agaactcgat     600
ccgtcacaat ctgtctcttc attctcgttt catgcgaatt cagaatgaag gagccggaaa     660
gagctcgtgg tgggttatta atccagatgc aaagccagga atgaatccac ggcgtacacg     720
tgaacgatcc aatactattg agacgactac aaaggctcaa ctcgaaaaat ctcgccgcgg     780
agccaagaag aggataaagg agagagcatt gatgggctcc cttcactcga cacttaatgg     840
aaattcgatt gccggatcga ttcaaacgat ttctcacgat ttgtatgatg atgattcaat     900
gcaaggagca tttgataacg ttccatcatc tttccgtccc cgaactcaat cgaacctctc     960
gattcctgga tcgtcgtctc gtgtttctcc agctattgga agtgatatct atgatgatct    1020
agaattccca tcatgggttg gcgaatcggt tccagcaatt ccaagtgata ttgttgatag    1080
aactgatcaa atgcgtatcg atgcaactac tcatattggt ggagttcaga ttaagcagga    1140
```

```
gtcgaagccg attaagacgg aaccaattgc tccaccacca tcataccacg agttgaacag    1200
tgtccgtgga tcgtgtgctc agaatccact tcttcgaaat ccaattgtgc caagcactaa    1260
cttcaagcca atgccactac cgggtgccta tggaaactat caaaatggtg gaataactcc    1320
aatcaattgg ctatcaacat ccaactcatc tccactgcct ggaattcaat cgtgtggaat    1380
tgtagctgca cagcatactg tcgcttcttc atcggctctt ccaattgatt tggaaaatct    1440
gacacttccc gatcagccac tgatggatac tatggatgtt gatgcattga tcagacatga    1500
gctgagtcaa gctggagggc agcatattca tttgatttg  taaattctct tcattttgtt    1560
tcccctggtg ttgttcgaaa gagagatagc aaagcagcga ggagtgagaa atcttccgtc    1620
ttcatctttt caaatcccta cctacacaca ctcaacgatc atcacagcca gaccatcaat    1680
attcttccaa attttgacgt cgttaatttt ttttcagttt tttcaaaaac tctattttct    1740
attttctgtc gtttgttccc ctttctctcg tctaattcca acacattcat cccagtgacg    1800
tcgtgtaata ataatataaa atacctcttc tctctttctt cccctaatgc gaaatatcga    1860
aaaaccgttg attattacct ctttttttctt gtttttttttt tctctctctc tctcccgtca    1920
tccaggttct tcactcttta aatgctacct ctatcccatc tttttcgctg taaatttgtt    1980
tcgcaatcaa aactgctaaa acacattccc caatctgtct tttttaattg aattttttcaa    2040
aaaatttgat ttcttgattt ctcttgtaat tctttaattt tcctcttttt tttccccctg    2100
gtagcaaatg tctagcgatt ctctttcttt ttttgtttaa ctttcacatc tggccgattc    2160
gaatcctccg tatacacaca cacatagtaa tctacctcca aaattttact gaaagatgtg    2220
atccctctc  tgtctccctc tacaaaacat tatttgtctg tttgtgtata ttgccaccac    2280
gtcgatttta aattaaaacc atcgtttttt cttcttttct acttttttct cgaaaaattt    2340
aacaacacac aaaaaaatcc ttcaaaaaat ctcagtttta aatggtgtgg caatatatcg    2400
gatccccctc tacaccagaa cagtcttgca atttcagaga atgattttca gattttttcat    2460
atcacaggcc cccttttttt gcttgttttt ttctctacct ctctttctttt tcattctatt    2520
tctctctctt gttttctctc tgttatcctg tacattttcc ttccaattct ttctggctat    2580
ttctgatttt cgagttcata ttctctacgt ctcactttct ctcgcgccac gcccccttttt    2640
tcgtctccct ccgcccccaa atatatttgc gactgtatga tgatgatgat gatttaataa    2700
aaat                                                                2704


<210> 45
<211> 510
<212> PRT
<213> Caenorhabditis elegans

<400> 45
Met Met Glu Met Leu Val Asp Gln Gly Thr Asp Ala Ser Ser Ser Ala
 1               5                   10                  15
Ser Thr Ser Thr Ser Ser Val Ser Arg Phe Gly Ala Asp Thr Phe Met
                20                  25                  30
Asn Thr Pro Asp Asp Val Met Met Asn Asp Asp Met Glu Pro Ile Pro
            35                  40                  45
Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln Leu Glu Pro
        50                  55                  60
Pro Leu Asn Ser Ser Pro Ile Ile His Glu Gln Ile Pro Glu Glu Asp
65                  70                  75                  80
Ala Asp Leu Tyr Gly Ser Asn Glu Gln Cys Gly Gln Leu Gly Gly Ala
                85                  90                  95
Ser Ser Asn Gly Ser Thr Ala Met Leu His Thr Pro Asp Gly Ser Asn
            100                 105                 110
Ser His Gln Thr Ser Phe Pro Ser Asp Phe Arg Met Ser Glu Ser Pro
            115                 120                 125
Asp Asp Thr Val Ser Gly Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp
        130                 135                 140
Gly Asn Met Ser Tyr Ala Glu Leu Ile Thr Thr Ala Ile Met Ala Ser
145                 150                 155                 160
Pro Glu Lys Arg Leu Thr Leu Ala Gln Val Tyr Glu Trp Met Val Gln
                165                 170                 175
Asn Val Pro Tyr Phe Arg Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
            180                 185                 190
```

-26-

```
Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met
        195                 200                 205
Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn
        210                 215                 220
Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser
225                 230                 235                 240
Asn Thr Ile Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg
                245                 250                 255
Gly Ala Lys Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His
            260                 265                 270
Ser Thr Leu Asn Gly Asn Ser Ile Ala Gly Ser Ile Gln Thr Ile Ser
            275                 280                 285
His Asp Leu Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val
        290                 295                 300
Pro Ser Ser Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly
305                 310                 315                 320
Ser Ser Ser Arg Val Ser Pro Ala Ile Gly Ser Asp Ile Tyr Asp Asp
                325                 330                 335
Leu Glu Phe Pro Ser Trp Val Gly Glu Ser Val Pro Ala Ile Pro Ser
            340                 345                 350
Asp Ile Val Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His
        355                 360                 365
Ile Gly Gly Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu
        370                 375                 380
Pro Ile Ala Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly
385                 390                 395                 400
Ser Cys Ala Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr
                405                 410                 415
Asn Phe Lys Pro Met Pro Leu Pro Gly Ala Tyr Gly Asn Tyr Gln Asn
            420                 425                 430
Gly Gly Ile Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro
            435                 440                 445
Leu Pro Gly Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val
    450                 455                 460
Ala Ser Ser Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro
465                 470                 475                 480
Asp Gln Pro Leu Met Asp Thr Met Asp Val Asp Ala Leu Ile Arg His
                485                 490                 495
Glu Leu Ser Gln Ala Gly Gly Gln His Ile His Phe Asp Leu
            500                 505                 510
```

```
<210> 46
<211> 509
<212> PRT
<213> Caenorhabditis elegans

<400> 46
Met Gln Gln Tyr Ile Tyr Gln Glu Ser Ser Ala Thr Ile Pro His His
 1               5                  10                  15
His Leu Asn Gln His Asn Asn Pro Tyr His Pro Met His Pro His His
            20                  25                  30
Gln Leu Pro His Met Gln Gln Leu Pro Gln Pro Leu Leu Asn Leu Asn
        35                  40                  45
Met Thr Thr Leu Thr Ser Ser Gly Ser Ser Val Ala Ser Ser Ile Gly
    50                  55                  60
Gly Gly Ala Gln Cys Ser Pro Cys Ala Ser Gly Ser Ser Thr Ala Ala
65                  70                  75                  80
```

```
Thr Asn Ser Ser Gln Gln Gln Gln Thr Val Gly Gln Met Leu Ala Ala
                85                  90              95
Ser Val Pro Cys Ser Ser Ser Gly Met Thr Leu Gly Met Ser Leu Asn
            100             105             110
Leu Ser Gln Gly Gly Gly Pro Met Pro Ala Lys Lys Lys Arg Cys Arg
        115             120             125
Lys Lys Pro Thr Asp Gln Leu Ala Gln Lys Lys Pro Asn Pro Trp Gly
    130             135             140
Glu Glu Ser Tyr Ser Asp Ile Ile Ala Lys Ala Leu Glu Ser Ala Pro
145             150             155             160
Asp Gly Arg Leu Lys Leu Asn Glu Ile Tyr Gln Trp Phe Ser Asp Asn
            165             170             175
Ile Pro Tyr Phe Gly Glu Arg Ser Ser Pro Glu Glu Ala Ala Gly Trp
        180             185             190
Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met Arg
        195             200             205
Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro
    210             215             220
Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser Asn
225             230             235             240
Thr Ile Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg Gly
            245             250             255
Ala Lys Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His Ser
            260             265             270
Thr Leu Asn Gly Asn Ser Ile Ala Gly Ser Ile Gln Thr Ile Ser His
        275             280             285
Asp Leu Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val Pro
    290             295             300
Ser Ser Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly Ser
305             310             315             320
Ser Ser Arg Val Ser Pro Ala Ile Gly Ser Asp Ile Tyr Asp Asp Leu
            325             330             335
Glu Phe Pro Ser Trp Val Gly Glu Ser Val Pro Ala Ile Pro Ser Asp
            340             345             350
Ile Val Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His Ile
        355             360             365
Gly Gly Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu Pro
    370             375             380
Ile Ala Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly Ser
385             390             395             400
Cys Ala Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr Asn
            405             410             415
Phe Lys Pro Met Pro Leu Pro Gly Ala Tyr Gly Asn Tyr Gln Asn Gly
        420             425             430
Gly Ile Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro Leu
        435             440             445
Pro Gly Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val Ala
    450             455             460
Ser Ser Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro Asp
465             470             475             480
Gln Pro Leu Met Asp Thr Met Asp Val Asp Ala Leu Ile Arg His Glu
            485             490             495
Leu Ser Gln Ala Gly Gly Gln His Ile His Phe Asp Leu
            500             505
```

-28-

<212> DNA
<213> Caenorhabditis elegans

<400> 47
```
cggaagccat ggagctcgag atctgattgc tggacacgga cggaactccg acgtatctcg          60
cagatgcatg ttaacatttt acatccacaa ctgcaaacga tggtcgagca gtggcaaatg         120
cgagaacgcc catcgctgga gaccgagaat ggcaaaggat cgctgctcct ggaaaatgaa         180
ggtgtcgcag atatcatcac tatgtgtcca ttcggagaag ttattagtgt agtatttccg         240
tggtttcttg caaatgtgcg aacatcgcta gaaatcaagc tatcagattt caaacatcaa         300
cttttcgaat tgattgctcc gatgaagtgg ggaacatatt ccgtaaagcc acaggattat         360
gtgttcagac agttgaataa tttcggcgaa attgaagtta tatttaacga cgatcaaccc         420
ctgtcgaaat tagagctcca cggcactttc ccaatgcttt ttctctacca acctgatgga         480
ataaacaggg ataaagaatt aatgagtgat ataagtcatt gtctaggata ctcactggat         540
aaactggaag agagcctcga tgaggaactc cgtcaatttc gtgcttctct ctgggctcgt         600
acgaagaaaa cgtgcttgac acgtggactt gagggtacca gtcactacgc gttccccgaa         660
gaacagtact tgtgtgttgg tgaatcgtgc ccgaaagatt tggaatcaaa agtcaaggct         720
gccaagctga gttatcagat gttttggaga aaacgtaaag cggaaatcaa tggagtttgc         780
gagaaaatga tgaagattca aattgaattc aatccgaacg aaactccgaa atctctgctt         840
cacacgtttc tctacgaaat gcgaaaattg gatgtatacg ataccgatga tcctgcagat         900
gaaggatggt ttcttcaatt ggctggacgt accacgtttg ttacaaatcc agatgtcaaa         960
cttacgtctt atgatggtgt ccgttcggaa ctggaaagct atcgatgccc tggattcgtt        1020
gttcgccgac aatcactagt cctcaaagac tattgtcgcc caaaaccact ctacgaacca        1080
cattatgtga gagcacacga acgaaaactt gctctagacg tgctcagcgt gtctatagat        1140
agcacaccaa aacagagcaa gaacagtgac atggttatga ctgattttcg tccgacagct        1200
tcactcaaac aagtttcact ttgggacctt gacgcgaatc ttatgatacg gcctgtgaat        1260
atttctggat tcgatttccc ggccgacgtg gatatgtacg ttcgaatcga attcagtgta        1320
tatgtgggga cactgacgct ggcatcaaaa tctacaacaa aagtgaatgc tcaatttgca        1380
aaatggaata aggaaatgta cacttttgat ctatacatga aggatatgcc accatctgca        1440
gtactcagca ttcgtgtttt gtacggaaaa gtgaaattaa aaagtgaaga attcgaagtt        1500
ggttgggtaa atatgtccct aaccgattgg agagatgaac tacgacaagg acaattttta        1560
ttccatctgt gggctcctga accgactgcc aatcgtagta ggatcggaga aaatggagca        1620
aggataggca ccaacgcagc ggttacaatt gaaatctcaa gttatggtgg tagagttcga        1680
atgccgagtc aaggacaata cacatatctc gtcaagcacc gaagtacttg acggaaact         1740
ttgaatatta tgggtgatga ctatgagtcg tgtatcagag atccaggata taagaagctt        1800
cagatgcttg tcaagaagca tgaatctgga attgtattag aggaagatga acaacgtcat        1860
gtctggatgt ggaggagata cattcaaaag caggagcctg atttgctcat tgtgctctcc        1920
gaactcgcat ttgtgtggac tgatcgtgag aacttttccg agctctatgt gatgcttgaa        1980
aaatggaaac cgccgagtgt ggcagccgcg ttgactttgc ttggaaaacg ttgcacggat        2040
cgtgtgattc gaaagtttgc agtggagaag ttgaatgagc agctgagccc ggtcacattc        2100
catcttttca tattgcctct catacaggcg ttgaagtacg aaccgcgtgc tcaatcggaa        2160
gttggaatga tgctcttgac tagagctctc tgcgattatc gaattggaca tcgacttttc        2220
tggctgctcc gtgcagagat tgctcgtttg agagattgtg atctgaaaag tgaagaatat        2280
cgccgtatct cacttctgat ggaagcttac ctccgtggaa atgaagagca catcaagatc        2340
atcacccgac aagttgacat ggttgatgag ctcacacgaa tcagcactct tgtcaaagga        2400
atgccaaaag atgttgctac gatgaaactg cgtgacgagc ttcgatcgat tagtcataaa        2460
atggaaaata tggattctcc actggatcct gtgtacaaac tgggtgaaat gataatcgac        2520
aaagccatcg tcctaggaag tgcaaaacgt ccgttaatgc ttcactggaa gaacaaaaat        2580
ccaaagagtg acctgcacct tccgttctgt gcaatgatct tcaagaatgg agacgatctt        2640
cgccaggaca tgcttgttct tcaagttctc gaagttatgg ataacatctg gaaggctgca        2700
aacattgatt gctgtttgaa cccgtacgca gttcttccaa tgggagaaat gattggaatt        2760
attgaagttg tgcctaattg taaaacaata ttcgagattc aagttggaac aggattcatg        2820
aatacagcag ttcggagtat tgatccttcg tttatgaata agtggattcg gaaacaatgc        2880
ggaattgaag atgaaaagaa gaaaagcaaa aaggactcta cgaaaaatcc catcgaaaag        2940
aagattgata atactcaagc catgaagaaa tattttgaaa gtgtcgatcg attcctatac        3000
tcgtgtgttg gatattcagt tgccacgtac ataatgggaa tcaggatcg tcacagtgat         3060
aatctgatgc tcactgaaga tggaaaatat gtccacattg atttcggtca catttttggga        3120
cacggaaaga ccaaacttgg gatccagcga gatcgtcaac cgtttattct aaccgaacac        3180
tttatgacag tgattcgatc gggtaaatct gtggatggaa attcgcatga gctacaaaaa        3240
```
                                    -29-

```
ttcaaaacgt tatgcgtcga agcctacgaa gtaatgtgga ataatcgaga tttgttcgtt    3300
tccttgttca ccttgatgct cggaatggag ttgcctgagc tgtcgacgaa agcggatttg    3360
gatcatttga agaaaaccct cttctgcaat ggagaaagca aagaagaagc gagaaagttt    3420
ttcgctggaa tctacgaaga agccttcaat ggatcatggt ctaccaaaac gaattggctc    3480
ttccacgcag tcaaacacta ctga                                          3504
```

<210> 48
<211> 1167
<212> PRT
<213> Caenorhabditis elegans

<400> 48

```
Arg Lys Pro Trp Ser Ser Arg Ser Asp Cys Trp Thr Arg Thr Glu Leu
1               5                   10                  15
Arg Arg Ile Ser Gln Met His Val Asn Ile Leu His Pro Gln Leu Gln
            20                  25                  30
Thr Met Val Glu Gln Trp Gln Met Arg Glu Arg Pro Ser Leu Glu Thr
        35                  40                  45
Glu Asn Gly Lys Gly Ser Leu Leu Leu Glu Asn Glu Gly Val Ala Asp
    50                  55                  60
Ile Ile Thr Met Cys Pro Phe Gly Glu Val Ile Ser Val Val Phe Pro
65                  70                  75                  80
Trp Phe Leu Ala Asn Val Arg Thr Ser Leu Glu Ile Lys Leu Ser Asp
                85                  90                  95
Phe Lys His Gln Leu Phe Glu Leu Ile Ala Pro Met Lys Trp Gly Thr
                100                 105                 110
Tyr Ser Val Lys Pro Gln Asp Tyr Val Phe Arg Gln Leu Asn Asn Phe
            115                 120                 125
Gly Glu Ile Glu Val Ile Phe Asn Asp Asp Gln Pro Leu Ser Lys Leu
            130                 135                 140
Glu Leu His Gly Thr Phe Pro Met Leu Phe Leu Tyr Gln Pro Asp Gly
145                 150                 155                 160
Ile Asn Arg Asp Lys Glu Leu Met Ser Asp Ile Ser His Cys Leu Gly
                165                 170                 175
Tyr Ser Leu Asp Lys Leu Glu Glu Ser Leu Asp Glu Glu Leu Arg Gln
            180                 185                 190
Phe Arg Ala Ser Leu Trp Ala Arg Thr Lys Lys Thr Cys Leu Thr Arg
            195                 200                 205
Gly Leu Glu Gly Thr Ser His Tyr Ala Phe Pro Glu Glu Gln Tyr Leu
        210                 215                 220
Cys Val Gly Glu Ser Cys Pro Lys Asp Leu Glu Ser Lys Val Lys Ala
225                 230                 235                 240
Ala Lys Leu Ser Tyr Gln Met Phe Trp Arg Lys Arg Lys Ala Glu Ile
                245                 250                 255
Asn Gly Val Cys Glu Lys Met Met Lys Ile Gln Ile Glu Phe Asn Pro
                260                 265                 270
Asn Glu Thr Pro Lys Ser Leu Leu His Thr Phe Leu Tyr Glu Met Arg
            275                 280                 285
Lys Leu Asp Val Tyr Asp Thr Asp Asp Pro Ala Asp Glu Gly Trp Phe
        290                 295                 300
Leu Gln Leu Ala Gly Arg Thr Thr Phe Val Thr Asn Pro Asp Val Lys
305                 310                 315                 320
Leu Thr Ser Tyr Asp Gly Val Arg Ser Glu Leu Glu Ser Tyr Arg Cys
                325                 330                 335
Pro Gly Phe Val Val Arg Arg Gln Ser Leu Val Leu Lys Asp Tyr Cys
                340                 345                 350
Arg Pro Lys Pro Leu Tyr Glu Pro His Tyr Val Arg Ala His Glu Arg
            355                 360                 365
```

-30-

```
Lys Leu Ala Leu Asp Val Leu Ser Val Ser Ile Asp Ser Thr Pro Lys
    370                 375                 380
Gln Ser Lys Asn Ser Asp Met Val Met Thr Asp Phe Arg Pro Thr Ala
385                 390                 395                 400
Ser Leu Lys Gln Val Ser Leu Trp Asp Leu Asp Ala Asn Leu Met Ile
            405                 410                 415
Arg Pro Val Asn Ile Ser Gly Phe Asp Phe Pro Ala Asp Val Asp Met
            420                 425                 430
Tyr Val Arg Ile Glu Phe Ser Val Tyr Val Gly Thr Leu Thr Leu Ala
        435                 440                 445
Ser Lys Ser Thr Thr Lys Val Asn Ala Gln Phe Ala Lys Trp Asn Lys
    450                 455                 460
Glu Met Tyr Thr Phe Asp Leu Tyr Met Lys Asp Met Pro Pro Ser Ala
465                 470                 475                 480
Val Leu Ser Ile Arg Val Leu Tyr Gly Lys Val Lys Leu Lys Ser Glu
            485                 490                 495
Glu Phe Glu Val Gly Trp Val Asn Met Ser Leu Thr Asp Trp Arg Asp
            500                 505                 510
Glu Leu Arg Gln Gly Gln Phe Leu Phe His Leu Trp Ala Pro Glu Pro
        515                 520                 525
Thr Ala Asn Arg Ser Arg Ile Gly Glu Asn Gly Ala Arg Ile Gly Thr
    530                 535                 540
Asn Ala Ala Val Thr Ile Glu Ile Ser Ser Tyr Gly Gly Arg Val Arg
545                 550                 555                 560
Met Pro Ser Gln Gly Gln Tyr Thr Tyr Leu Val Lys His Arg Ser Thr
            565                 570                 575
Trp Thr Glu Thr Leu Asn Ile Met Gly Asp Asp Tyr Glu Ser Cys Ile
            580                 585                 590
Arg Asp Pro Gly Tyr Lys Lys Leu Gln Met Leu Val Lys Lys His Glu
        595                 600                 605
Ser Gly Ile Val Leu Glu Glu Asp Glu Gln Arg His Val Trp Met Trp
    610                 615                 620
Arg Arg Tyr Ile Gln Lys Gln Glu Pro Asp Leu Leu Ile Val Leu Ser
625                 630                 635                 640
Glu Leu Ala Phe Val Trp Thr Asp Arg Glu Asn Phe Ser Glu Leu Tyr
            645                 650                 655
Val Met Leu Glu Lys Trp Lys Pro Pro Ser Val Ala Ala Ala Leu Thr
            660                 665                 670
Leu Leu Gly Lys Arg Cys Thr Asp Arg Val Ile Arg Lys Phe Ala Val
        675                 680                 685
Glu Lys Leu Asn Glu Gln Leu Ser Pro Val Thr Phe His Leu Phe Ile
    690                 695                 700
Leu Pro Leu Ile Gln Ala Leu Lys Tyr Glu Pro Arg Ala Gln Ser Glu
705                 710                 715                 720
Val Gly Met Met Leu Leu Thr Arg Ala Leu Cys Asp Tyr Arg Ile Gly
            725                 730                 735
His Arg Leu Phe Trp Leu Leu Arg Ala Glu Ile Ala Arg Leu Arg Asp
            740                 745                 750
Cys Asp Leu Lys Ser Glu Glu Tyr Arg Arg Ile Ser Leu Leu Met Glu
        755                 760                 765
Ala Tyr Leu Arg Gly Asn Glu His Ile Lys Ile Ile Thr Arg Gln
    770                 775                 780
Val Asp Met Val Asp Glu Leu Thr Arg Ile Ser Thr Leu Val Lys Gly
785                 790                 795                 800
Met Pro Lys Asp Val Ala Thr Met Lys Leu Arg Asp Glu Leu Arg Ser
            805                 810                 815
Ile Ser His Lys Met Glu Asn Met Asp Ser Pro Leu Asp Pro Val Tyr
            820                 825                 830
```

-31-

```
Lys Leu Gly Glu Met Ile Ile Asp Lys Ala Ile Val Leu Gly Ser Ala
        835                 840                 845
Lys Arg Pro Leu Met Leu His Trp Lys Asn Lys Asn Pro Lys Ser Asp
        850                 855                 860
Leu His Leu Pro Phe Cys Ala Met Ile Phe Lys Asn Gly Asp Asp Leu
865                 870                 875                 880
Arg Gln Asp Met Leu Val Leu Gln Val Leu Glu Val Met Asp Asn Ile
                885                 890                 895
Trp Lys Ala Ala Asn Ile Asp Cys Cys Leu Asn Pro Tyr Ala Val Leu
            900                 905                 910
Pro Met Gly Glu Met Ile Gly Ile Ile Glu Val Val Pro Asn Cys Lys
        915                 920                 925
Thr Ile Phe Glu Ile Gln Val Gly Thr Gly Phe Met Asn Thr Ala Val
        930                 935                 940
Arg Ser Ile Asp Pro Ser Phe Met Asn Lys Trp Ile Arg Lys Gln Cys
945                 950                 955                 960
Gly Ile Glu Asp Glu Lys Lys Lys Ser Lys Lys Asp Ser Thr Lys Asn
                965                 970                 975
Pro Ile Glu Lys Lys Ile Asp Asn Thr Gln Ala Met Lys Lys Tyr Phe
                980                 985                 990
Glu Ser Val Asp Arg Phe Leu Tyr Ser Cys Val Gly Tyr Ser Val Ala
                995                 1000                1005
Thr Tyr Ile Met Gly Ile Lys Asp Arg His Ser Asp Asn Leu Met Leu
        1010                1015                1020
Thr Glu Asp Gly Lys Tyr Val His Ile Asp Phe Gly His Ile Leu Gly
1025                1030                1035                104
His Gly Lys Thr Lys Leu Gly Ile Gln Arg Asp Arg Gln Pro Phe Ile
            1045                1050                1055
Leu Thr Glu His Phe Met Thr Val Ile Arg Ser Gly Lys Ser Val Asp
            1060                1065                1070
Gly Asn Ser His Glu Leu Gln Lys Phe Lys Thr Leu Cys Val Glu Ala
            1075                1080                1085
Tyr Glu Val Met Trp Asn Asn Arg Asp Leu Phe Val Ser Leu Phe Thr
        1090                1095                1100
Leu Met Leu Gly Met Glu Leu Pro Glu Leu Ser Thr Lys Ala Asp Leu
1105                1110                1115                112
Asp His Leu Lys Lys Thr Leu Phe Cys Asn Gly Glu Ser Lys Glu Glu
            1125                1130                1135
Ala Arg Lys Phe Phe Ala Gly Ile Tyr Glu Glu Ala Phe Asn Gly Ser
            1140                1145                1150
Trp Ser Thr Lys Thr Asn Trp Leu Phe His Ala Val Lys His Tyr
        1155                1160                1165


<210> 49
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe/primer derived from C. elegans

<400> 49
ggaaatattt taggccagat gcg                                          23

<210> 50
<211> 20
<212> DNA
```

<213> Artificial Sequence

<220>
<223> Probe/primer derived from C. elegans

<400> 50
cggacagtcc tgaatacacc   20

<210> 51
<211> 28
<212> DNA
<213> Artificial Sequence

<220>
<223> Probe/primer derived from C. elegans

<400> 51
tctcgttgtt tgccgtcgga tgtctgcc   28

<210> 52
<211> 3017
<212> DNA
<213> Caenorhabditis elegans

<400> 52
```
gtaatcaaat tgtaaaggaa aaatattaat agtcagagta cacataaatg ggtgatcatc     60
ataatttaac gggccttccc ggtacctcca tcccgccaca gttcaactat tctcagcccg    120
gtaccagcac cggaggcccg ctttatggtg gaaaaccttc tcatggattg gaagatattc    180
ctgatgtaga ggaatatgag aggaacctgc tcggggctgg agcaggtttt aatctgctca    240
atgtaggaaa tatggctaat gttcccgacg agcacacacc gatgatgtca ccagtgaata    300
caactacaaa gattctacaa cggagtggta ttaaaatgga aatcccgcca tatttggatc    360
cagacagtca ggatgatgac ccggaagatg gtgtcaacta cccggatcca gatttatttg    420
acacaaaaaa cacaaatatg accgagtacg atttggatgt gttgaagctt ggaaaaccag    480
cagtagatga agcacggaaa aagatcgaag ttcccgacgc tagtgcgccg ccaaacaaaa    540
ttgtagaata tttgatgtat tatagaacgt taaaagaaag tgaactcata caactgaatg    600
cgtatcggac aaaacgaaat cgattatcgt tgaacttggt caaaaacaat attgatcgag    660
agttcgacca aaaagcttgc gagtccctgg tgaaaaaatt gaaggataag aagaatgatc    720
tccagaacct gattgatgtg gttctttcaa aaggtacaaa atataccggt tgcattacaa    780
ttccaaggac acttgatggc cggttacagg tccacggaag aaaaggtttc cctcacgtag    840
tctatggcaa actgtggagg tttaatgaaa tgacaaaaaa cgaaacgcgt catgtggacc    900
actgcaagca cgcatttgaa atgaaaagtg acatggtatg cgtgaatccc tatcactacg    960
aaattgtcat tggaactatg attgttgggc agagggatca tgacaatcga gatatgccgc   1020
cgccacatca acgctaccac actccaggtc ggcaggatcc agttgacgat atgagtagat   1080
ttataccacc agcttccatt cgtccgcctc cgatgaacat gcacacaagg cctcagccta   1140
tgcctcaaca attgccttca gttggcgcaa cgtttgccca tcctctccca tcatcaggcgc   1200
cacataaccc aggggtttca catccgtact ccattgctcc acagacccat tacccgttga   1260
acatgaaccc aattccgcaa atgccgcaaa tgccacaaat gccaccacct ctccatcagg   1320
gatatggaat gaatgggccg agttgctctt cagaaaacaa caatccattc caccaaaatc   1380
accattataa tgatattagc catccaaatc actattccta cgactgtggt ccgaacttgt   1440
acgggtttcc aactccttat ccggattttc accatccttt caatcagcaa ccacaccagc   1500
cgccacaact atcacaaaac catacgtccc aacaaggcag tcatcaacca gggcaccaag   1560
gtcaggtacc gaatgatcca ccaatttcaa gaccagtgtt acaaccatca acagtcacct   1620
tggacgtgtt ccgtcggtac tgtagacaga catttggaaa tcgattttt gaaggagaaa   1680
gtgaacaatc cggcgcaata attcggtcta gtaacaaatt cattgaagaa tttgattcgc   1740
cgatttgtgg tgtgacagtt gttcgaccgc ggatgacaga cggtgaggtt ttggagaaca   1800
tcatgccgga agatgcacca tatcatgaca tttgcaagtt cattttgagg ctcacatcag   1860
aaagtgtaac tttctcagga gaggggccag aagttagtga tttgaacgaa aaatgggGaa   1920
caattgtgta ctatgagaaa aatttgcaaa ttggcgagaa aaaatgttcg agaggaaatt   1980
```

```
tccacgtgga tggcggattc atttgctctg agaatcgtta cagtctcgga cttgagccaa    2040
atccaattag agaaccagtg gcgtttaaag ttcgtaaagc aatagtggat ggaattcgct    2100
tttcctacaa aaaagacggg agtgtttggc ttcaaaaccg catgaagtac ccggtatttg    2160
tcacttctgg gtatctcgac gagcaatcag gaggcctaaa gaaggataaa gtgcacaaag    2220
tttacggatg tgcgtctatc aaaacgtttg gcttcaacgt ttccaaacaa atcatcagag    2280
acgcgcttct ttccaagcaa atggcaacaa tgtacttgca aggaaaattg actccgatga    2340
attatatcta cgagaagaag actcaggaag agctgcgaag ggaagcaaca cgcaccactg    2400
attcattggc caagtactgt tgtgtccgtg tctcgttctg caaaggattt ggagaagcat    2460
acccagaacg cccgtcaatt catgattgtc cagtttggat tgagttgaaa atcaacattg    2520
cctacgattt catggattca atctgccagt acataaccaa ctgcttcgag ccgctaggaa    2580
tggaagattt tgcaaaattg ggaatcaacg tcagtgatga ctaaatgata acttttttca    2640
ctcaccctac tagatactga tttagtctta ttccaaatca tccaacgata tcaaactttt    2700
tcctttgaac tttgcatact atgttatcac aagttccaag cagtttcaat acaaacatag    2760
gatatgttaa caacttttga taagaatcaa gttaccaact gttcattgtg agctttgagc    2820
tgtatagaag gacaatgtat cccatacctc aatctttaat agtcatcagt cactggtccc    2880
gcaccaattt tttcgattcg catatgtcat atattgcacc gtggcccttt ttattgtaac    2940
ttttaatata ttttcttccc aacttgtgaa tatgattgat gaaccaccat tttgagtaat    3000
aaatgtattt tttgtgg                                                   3017


<210> 53
<211> 3119
<212> DNA
<213> Caenorhabditis elegans

<400> 53
gtaatcaaat tgtaaaggaa aaatattaat agtcagagta cacataaatg ggtgatcatc      60
ataatttaac gggccttccc ggtacctcca tcccgccaca gttcaactat tctcagcccg     120
gtaccagcac cggaggcccg ctttatggtg gaaaaccttc tcatggattg gaagatattc     180
ctgatgtaga ggaatatgag aggaacctgc tcggggctgg agcaggtttt aatctgctca     240
atgtaggaaa tatggctaat gaatttaaac caataatcac attggacacg aaaccacctc     300
gtgatgccaa caagtcattg gcattcaatg gcgggttgaa gctaatcact ccgaaaactg     360
aagttcccga cgagcacaca ccgatgatgt caccagtgaa tacaactaca aagattctac     420
aacggagtgg tattaaaatg gaaatcccgc catatttgga tccagacagt caggatgatg     480
acccggaaga tggtgtcaac tacccggatc cagatttatt tgacacaaaa aacacaaata     540
tgaccgagta cgatttggat gtgttgaagc ttggaaaacc agcagtagat gaagcacgga     600
aaaagatcga agttcccgac gctagtcgcc cgccaaacaa aattgtagaa tatttgatgt     660
attatagaac gttaaaagaa agtgaactca tacaactgaa tgcgtatcgg acaaaacgaa     720
atcgattatc gttgaacttg gtcaaaaaca atattgatcg agagttcgac caaaaagctt     780
gcgagtccct ggtgaaaaaa ttgaaggata agaagaatga tctccagaac ctgattgatg     840
tggttctttc aaaaggtaca aaatataccg gttgcattac aattccaagg acacttgatg     900
gccggttaca ggtccacgga agaaaaggtt tccctcacgt agtctatggc aaactgtgga     960
ggtttaatga aatgacaaaa aacgaaacgc gtcatgtgga ccactgcaag cacgcatttg    1020
aaatgaaaag tgacatggta tgcgtgaatc cctatcacta cgaaattgtc attggaacta    1080
tgattgttgg gcagagggat catgacaatc gagatatgcc gccgccacat caacgctacc    1140
acactccagg tcggcaggat ccagttgacg atatgagtag atttatacca ccagcttcca    1200
ttcgtccgcc tccgatgaac atgcacacaa ggcctcagcc tatgcctcaa caattgcctt    1260
cagttggcgc aacgtttgcc catcctctcc cacatcaggc gccacataac ccaggggttt    1320
cacatccgta ctccattgct ccacagaccc attaccgtt gaacatgaac ccaattccgc    1380
aaatgccgca aatgccacaa atgccaccac ctctccatca gggatatgga atgaatgggc    1440
cgagttgctc ttcagaaaac aacaatccat tccaccaaaa tcaccattat aatgatatta    1500
gccatccaaa tcactattcc tacgactgtg gtccgaactt gtacgggttt ccaactcctt    1560
atccggattt tcaccatcct ttcaatcagc aaccacacca gccgccacaa ctatcacaaa    1620
accatacgtc ccaacaaggc agtcatcaac cagggcacca aggtcaggta ccgaatgatc    1680
caccaatttc aagaccagtg ttacaaccat caacagtcac cttggacgtg ttccgtcggt    1740
actgtagaca gacatttgga aatcgatttt ttgaaggaga aagtgaacaa tccggcgcaa    1800
taattcggtc tagtaacaaa ttcattgaag aatttgattc gccgatttgt ggtgtgacag    1860
ttgttcgacc gcggatgaca gacggtgagg ttttggagaa catcatgccg gaagatgcac    1920
catatcatga catttgcaag ttcattttga ggctcacatc agaaagtgta actttctcag    1980
```

-34-

```
gagaggggcc agaagttagt gatttgaacg aaaaatgggg aacaattgtg tactatgaga    2040
aaaatttgca aattggcgag aaaaaatgtt cgagaggaaa tttccacgtg gatggcggat    2100
tcatttgctc tgagaatcgt tacagtctcg gacttgagcc aaatccaatt agagaaccag    2160
tggcgtttaa agttcgtaaa gcaatagtgg atggaattcg cttttcctac aaaaaagacg    2220
ggagtgtttg gcttcaaaac cgcatgaagt acccggtatt tgtcacttct gggtatctcg    2280
acgagcaatc aggaggccta aagaaggata aagtgcacaa agtttacgga tgtgcgtcta    2340
tcaaaacgtt tggcttcaac gtttccaaac aaatcatcag agacgcgctt ctttccaagc    2400
aaatggcaac aatgtacttg caaggaaaat tgactccgat gaattatatc tacgagaaga    2460
agactcagga agagctgcga agggaagcaa cacgcaccac tgattcattg gccaagtact    2520
gttgtgtccg tgtctcgttc tgcaaaggat ttggagaagc atacccagaa cgcccgtcaa    2580
ttcatgattg tccagtttgg attgagttga aaatcaacat tgcctacgat ttcatggatt    2640
caatctgcca gtacataacc aactgcttcg agccgctagg aatggaagat tttgcaaaat    2700
tgggaatcaa cgtcagtgat gactaaatga taactttttt cactcaccct actagatact    2760
gatttagtct tattccaaat catccaacga tatcaaactt tttcctttga actttgcata    2820
ctatgttatc acaagttcca agcagtttca atacaaacat aggatatgtt aacaactttt    2880
gataagaatc aagttaccaa ctgttcattg tgagctttga gctgtataga aggacaatgt    2940
atcccatacc tcaatcttta atagtcatca gtcactggtc ccgcaccaat ttttcgatt    3000
cgcatatgtc atatattgca ccgtggccct ttttattgta acttttaata tattttcttc    3060
ccaacttgtg aatatgattg atgaaccacc attttgagta ataaatgtat tttttgtgg    3119
```

<210> 54
<211> 103
<212> PRT
<213> Caenorhabditis elegans

<400> 54
```
Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp Gly Asn Met Ser Tyr Ala
1               5                   10                  15
Glu Leu Ile Thr Thr Ala Ile Met Ala Ser Pro Glu Lys Arg Leu Thr
            20                  25                  30
Leu Ala Gln Val Tyr Glu Trp Met Val Gln Asn Val Pro Tyr Phe Arg
        35                  40                  45
Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn Ser Ile Arg
    50                  55                  60
His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly
65                  70                  75                  80
Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly
            85                  90                  95
Met Asn Pro Arg Arg Thr Arg
            100
```

<210> 55
<211> 41
<212> PRT
<213> Caenorhabditis elegans

<400> 55
```
Thr Phe Met Asn Thr Pro Asp Asp Val Met Met Asn Asp Asp Met Glu
1               5                   10                  15
Pro Ile Pro Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln
            20                  25                  30
Leu Glu Pro Pro Leu Asn Ser Ser Pro
        35                  40
```

<210> 56
<211> 109

-35-
```

<212> PRT
<213> Caenorhabditis elegans

<400> 56
Asp Asp Thr Val Ser Gly Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp
 1               5                  10                  15
Gly Asn Met Ser Tyr Ala Glu Leu Ile Thr Thr Ala Ile Met Ala Ser
            20                  25                  30
Pro Glu Lys Arg Leu Thr Leu Ala Gln Val Tyr Glu Trp Met Val Gln
            35                  40                  45
Asn Val Pro Tyr Phe Arg Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
        50                  55                  60
Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met
65                  70                  75                  80
Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn
                85                  90                  95
Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg
            100                 105


<210> 57
<211> 655
<212> PRT
<213> Homo sapiens

<400> 57
Met Ala Glu Ala Pro Gln Val Val Glu Ile Asp Pro Asp Phe Glu Pro
 1               5                  10                  15
Leu Pro Arg Pro Arg Ser Cys Thr Trp Pro Leu Pro Arg Pro Glu Phe
            20                  25                  30
Ser Gln Ser Asn Ser Ala Thr Ser Ser Pro Ala Pro Ser Gly Ser Ala
            35                  40                  45
Ala Ala Asn Pro Asp Ala Ala Ala Gly Leu Pro Ser Ala Ser Ala Ala
        50                  55                  60
Ala Val Ser Ala Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser
65                  70                  75                  80
Glu Asp Phe Pro Gln Ala Pro Gly Ser Val Ala Ala Ala Val Ala Ala
                85                  90                  95
Ala Ala Ala Ala Ala Ala Thr Gly Gly Leu Cys Gly Asp Phe Gln Gly
            100                 105                 110
Pro Glu Ala Gly Cys Leu His Pro Ala Pro Pro Gln Pro Pro Pro Pro
            115                 120                 125
Gly Pro Val Ser Gln His Pro Pro Val Pro Pro Ala Ala Ala Gly Pro
        130                 135                 140
Leu Ala Gly Gln Pro Arg Lys Ser Ser Ser Ser Arg Arg Asn Ala Trp
145                 150                 155                 160
Gly Asn Leu Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser
            165                 170                 175
Ala Glu Lys Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys
            180                 185                 190
Ser Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
            195                 200                 205
Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile
        210                 215                 220
Arg Val Gln Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn
225                 230                 235                 240
Pro Glu Gly Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Ser
                245                 250                 255

-36-

```
Met Asp Asn Asn Ser Lys Phe Ala Lys Ser Arg Ser Arg Ala Ala Lys
            260                 265                 270
Lys Lys Ala Ser Leu Gln Ser Gly Gln Glu Gly Ala Gly Asp Ser Pro
        275                 280                 285
Gly Ser Gln Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn
        290                 295                 300
Asp Asp Phe Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ser Asn
305                 310                 315                 320
Ala Ser Thr Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp
            325                 330                 335
Asp Leu Gly Glu Gly Asp Val His Ser Met Val Tyr Pro Pro Ser Ala
            340                 345                 350
Ala Lys Met Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro
        355                 360                 365
Glu Asn Met Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro
        370                 375                 380
Thr Ser Leu Thr Val Ser Thr Gln Ser Ser Pro Gly Thr Met Met Gln
385                 390                 395                 400
Gln Thr Pro Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser
            405                 410                 415
Pro Ser Pro Asn Tyr Gln Lys Tyr Thr Tyr Gly Gln Ser Ser Met Ser
            420                 425                 430
Pro Leu Pro Gln Met Pro Ile Gln Thr Leu Gln Asp Asn Lys Ser Ser
        435                 440                 445
Tyr Gly Gly Met Ser Gln Tyr Asn Cys Ala Pro Gly Leu Leu Lys Glu
    450                 455                 460
Leu Leu Thr Ser Asp Ser Pro Pro His Asn Asp Ile Met Thr Pro Val
465                 470                 475                 480
Asp Pro Gly Val Ala Gln Pro Asn Ser Arg Val Leu Gly Gln Asn Val
            485                 490                 495
Met Met Gly Pro Asn Ser Val Met Ser Thr Tyr Gly Ser Gln Ala Ser
            500                 505                 510
His Asn Lys Met Met Asn Pro Ser Ser His Thr His Pro Gly His Ala
        515                 520                 525
Gln Gln Thr Ser Ala Val Asn Gly Arg Pro Leu Pro His Thr Val Ser
        530                 535                 540
Thr Met Pro His Thr Ser Gly Met Asn Arg Leu Thr Gln Val Lys Thr
545                 550                 555                 560
Pro Val Gln Val Pro Leu Pro His Pro Met Gln Met Ser Ala Leu Gly
            565                 570                 575
Gly Tyr Ser Ser Val Ser Ser Cys Asn Gly Tyr Gly Arg Met Gly Leu
            580                 585                 590
Leu His Gln Glu Lys Leu Pro Ser Asp Leu Asp Gly Met Phe Ile Glu
        595                 600                 605
Arg Leu Asp Cys Asp Met Glu Ser Ile Ile Arg Asn Asp Leu Met Asp
    610                 615                 620
Gly Asp Thr Leu Asp Phe Asn Phe Asp Asn Val Leu Pro Asn Gln Ser
625                 630                 635                 640
Phe Pro His Ser Val Lys Thr Thr Thr His Ser Trp Val Ser Gly
            645                 650                 655
```

<210> 58
<211> 98
<212> PRT
<213> Caenorhabditis elegans

<400> 58

```
Lys Pro Asn Pro Trp Gly Glu Glu Ser Tyr Ser Asp Ile Ile Ala Lys
 1           5               10              15
Ala Leu Glu Ser Ala Pro Asp Gly Arg Leu Lys Leu Asn Glu Ile Tyr
            20              25              30
Gln Trp Phe Ser Asp Asn Ile Pro Tyr Phe Gly Glu Arg Ser Ser Pro
        35              40              45
Glu Glu Ala Ala Gly Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu
    50              55              60
His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser
65              70              75              80
Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg
            85              90              95
Thr Arg
```

<210> 59
<211> 7
<212> PRT
<213> Caenorhabditis elegans

<400> 59
```
Trp Lys Asn Ser Ile Arg His
 1           5
```

<210> 60
<211> 121
<212> PRT
<213> Caenorhabditis elegans

<400> 60
```
Gln Val Leu Asp Asp His Asp Tyr Gly Arg Cys Val Asp Trp Trp Gly
 1           5               10              15
Val Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
            20              25              30
Ser Lys Asp His Asn Lys Leu Phe Glu Leu Ile Met Ala Gly Asp Leu
        35              40              45
Arg Phe Pro Ser Lys Leu Ser Gln Glu Ala Arg Thr Leu Leu Thr Gly
    50              55              60
Leu Leu Val Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Pro Glu Asp
65              70              75              80
Ala Leu Glu Ile Cys Arg Ala Asp Phe Phe Arg Thr Val Asp Trp Glu
            85              90              95
Ala Thr Tyr Arg Lys Glu Ile Glu Pro Pro Tyr Lys Pro Asn Val Gln
            100             105             110
Ser Glu Thr Asp Thr Ser Tyr Phe Asp
        115             120
```

<210> 61
<211> 66
<212> PRT
<213> Caenorhabditis elegans

<400> 61
```
Thr Met Glu Asp Phe Asp Phe Leu Lys Val Leu Gly Lys Gly Thr Phe
 1           5               10              15
```

-38-

```
Gly Lys Val Ile Leu Cys Lys Glu Lys Arg Thr Gln Lys Leu Tyr Ala
            20                  25                  30
Ile Lys Ile Leu Lys Lys Asp Val Ile Ile Ala Arg Glu Glu Val Ala
            35                  40                  45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Arg Cys Lys His Pro Phe
    50                  55                  60
Leu Thr
65


<210> 62
<211> 45
<212> PRT
<213> Caenorhabditis elegans

<400> 62
Lys Leu Glu Asn Leu Leu Leu Asp Lys Asp Gly His Ile Lys Ile Ala
 1           5                  10                  15
Asp Phe Gly Leu Cys Lys Glu Glu Ile Ser Phe Gly Asp Lys Thr Ser
            20                  25                  30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
            35                  40                  45


<210> 63
<211> 57
<212> PRT
<213> Caenorhabditis elegans

<400> 63
Tyr Phe Gln Glu Leu Lys Tyr Ser Phe Gln Glu Gln His Tyr Leu Cys
 1           5                  10                  15
Phe Val Met Gln Phe Ala Asn Gly Gly Glu Leu Phe Thr His Val Arg
            20                  25                  30
Lys Cys Gly Thr Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ala Glu
            35                  40                  45
Ile Val Leu Ala Leu Gly Tyr Leu His
    50                  55


<210> 64
<211> 59
<212> PRT
<213> Caenorhabditis elegans               .

<400> 64
Ser Thr Phe Ala Ile Phe Tyr Phe Gln Thr Met Leu Phe Glu Lys Pro
 1           5                  10                  15
Arg Pro Asn Met Phe Met Val Arg Cys Leu Gln Trp Thr Thr Val Ile
            20                  25                  30
Glu Arg Thr Phe Tyr Ala Glu Ser Ala Glu Val Arg Gln Arg Trp Ile
            35                  40                  45
His Ala Ile Glu Ser Ile Ser Lys Lys Tyr Lys
    50                  55


<210> 65
<211> 33
```

<212> PRT
<213> Caenorhabditis elegans

<400> 65
Leu Gln Glu Leu Lys Tyr Ser Phe Gln Thr Asn Asp Arg Leu Cys Phe
1   5   10   15
Val Met Glu Phe Ala Ile Gly Gly Asp Leu Tyr Tyr His Leu Asn Arg
            20   25   30
Glu

<210> 66
<211> 21
<212> PRT
<213> Caenorhabditis elegans

<400> 66
Val Val Ile Glu Gly Trp Leu His Lys Lys Gly Glu His Ile Arg Asn
1   5   10   15
Trp Arg Pro Arg Phe
            20

<210> 67
<211> 26
<212> PRT
<213> Caenorhabditis elegans

<400> 67
Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ser Glu Ile Val Leu Ala
1   5   10   15
Leu Gly Tyr Leu His Ala Asn Ser Ile Val
            20   25

<210> 68
<211> 39
<212> PRT
<213> Caenorhabditis elegans

<400> 68
Ile Arg Val Ser Phe Cys Lys Gly Phe Gly Glu Thr Tyr Ser Arg Leu
1   5   10   15
Lys Val Val Asn Leu Pro Cys Trp Ile Glu Ile Ile Leu His Glu Pro
            20   25   30
Ala Asp Glu Tyr Asp Thr Val
            35

<210> 69
<211> 45
<212> PRT
<213> Caenorhabditis elegans

<400> 69
Ser Arg Asn Ser Lys Ser Ser Gln Ile Arg Asn Thr Val Gly Ala Gly
1   5   10   15

```
Ile Gln Leu Ala Tyr Glu Asn Gly Glu Leu Trp Leu Thr Val Leu Thr
            20                  25                  30
Asp Gln Ile Val Phe Val Gln Cys Pro Phe Leu Asn Gln
            35                  40                  45


<210> 70
<211> 29
<212> PRT
<213> Caenorhabditis elegans

<400> 70
Asn Glu Met Leu Asp Pro Glu Pro Lys Tyr Pro Lys Glu Glu Lys Pro
 1               5                  10                  15
Trp Cys Thr Ile Phe Tyr Tyr Glu Leu Thr Val Arg Val
            20                  25


<210> 71
<211> 29
<212> PRT
<213> Caenorhabditis elegans

<400> 71
Gln Leu Gly Lys Ala Phe Glu Ala Lys Val Pro Thr Ile Thr Ile Asp
 1               5                  10                  15
Gly Ala Thr Gly Ala Ser Asp Glu Cys Arg Met Ser Leu
            20                  25


<210> 72
<211> 105
<212> PRT
<213> Caenorhabditis elegans

<400> 72
Ser Pro Asp Asp Gly Leu Leu Asp Ser Ser Glu Glu Ser Arg Arg Arg
 1               5                  10                  15
Gln Lys Thr Cys Arg Val Cys Gly Asp His Ala Thr Gly Tyr Asn Phe
            20                  25                  30
Asn Val Ile Thr Cys Glu Ser Cys Lys Ala Phe Phe Arg Arg Asn Ala
            35                  40                  45
Leu Arg Pro Lys Glu Phe Lys Cys Pro Tyr Ser Glu Asp Cys Glu Ile
        50                  55                  60
Asn Ser Val Ser Arg Arg Phe Cys Gln Lys Cys Arg Leu Arg Lys Cys
65                  70                  75                  80
Phe Thr Val Gly Met Lys Lys Glu Trp Ile Leu Asn Glu Glu Gln Leu
                85                  90                  95
Arg Arg Arg Lys Asn Ser Arg Leu Asn
                100                 105


<210> 73
<211> 89
<212> PRT
<213> Caenorhabditis elegans

<400> 73
```

```
Leu Asp Ser Ser Glu Glu Ser Arg Arg Arg Gln Lys Thr Cys Arg Val
1               5                   10                  15
Cys Gly Asp His Ala Thr Gly Tyr Asn Phe Asn Val Ile Thr Cys Glu
            20                  25                  30
Ser Cys Lys Ala Phe Phe Arg Arg Asn Ala Leu Arg Pro Lys Glu Phe
        35                  40                  45
Lys Cys Pro Tyr Ser Glu Asp Cys Glu Ile Asn Ser Val Ser Arg Arg
    50                  55                  60
Phe Cys Gln Lys Cys Arg Leu Arg Lys Cys Phe Thr Val Gly Met Lys
65                  70                  75                  80
Lys Glu Trp Ile Leu Asn Glu Glu Gln
                85
```

<210> 74
<211> 73
<212> PRT
<213> Caenorhabditis elegans

<400> 74
```
Asp Ile Met Asn Ile Met Asp Val Thr Met Arg Arg Phe Val Lys Val
1               5                   10                  15
Ala Lys Gly Val Pro Ala Phe Arg Glu Val Ser Gln Glu Gly Lys Phe
            20                  25                  30
Ser Leu Leu Lys Gly Gly Met Ile Glu Met Leu Thr Val Arg Gly Val
        35                  40                  45
Thr Arg Tyr Asp Ala Ser Thr Asn Ser Phe Lys Thr Pro Thr Ile Lys
    50                  55                  60
Gly Gln Asn Val Ser Val Asn Val Asp
65                  70
```

<210> 75
<211> 112
<212> PRT
<213> Caenorhabditis elegans

<400> 75
```
Ser Gly Ser Leu Val Asp Leu Met Ile Lys Asn Leu Thr Ala Tyr Thr
1               5                   10                  15
Gln Gly Leu Asn Glu Thr Val Lys Asn Arg Thr Ala Glu Leu Glu Lys
            20                  25                  30
Glu Gln Glu Lys Gly Asp Gln Leu Leu Met Glu Leu Leu Pro Lys Ser
        35                  40                  45
Val Ala Asn Asp Leu Lys Asn Gly Ile Ala Val Asp Pro Lys Val Tyr
    50                  55                  60
Glu Asn Ala Thr Ile Leu Tyr Ser Asp Ile Val Gly Phe Thr Ser Leu
65                  70                  75                  80
Cys Ser Gln Ser Gln Pro Met Glu Val Val Thr Leu Leu Ser Gly Met
            85                  90                  95
Tyr Gln Arg Phe Asp Leu Ile Ile Ser Gln Gln Gly Gly Tyr Lys Val
            100                 105                 110
```

<210> 76
<211> 107
<212> PRT
<213> Caenorhabditis elegans

-42-

```
<400> 76
Met Glu Thr Ile Gly Asp Ala Tyr Cys Val Ala Ala Gly Leu Pro Val
 1               5                  10                 15
Val Met Glu Lys Asp His Val Lys Ser Ile Cys Met Ile Ala Leu Leu
            20                  25                 30
Gln Arg Asp Cys Leu His His Phe Glu Ile Pro His Arg Pro Gly Thr
            35                  40                 45
Phe Leu Asn Cys Arg Trp Gly Phe Asn Ser Gly Pro Val Phe Ala Gly
        50                  55                 60
Val Ile Gly Gln Lys Ala Pro Arg Tyr Ala Cys Phe Gly Glu Ala Val
65                  70                  75                 80
Ile Leu Ala Ser Lys Met Glu Ser Ser Gly Val Glu Asp Arg Ile Gln
                85                  90                 95
Met Thr Leu Ala Ser Gln Gln Leu Leu Glu Glu
            100                 105


<210> 77
<211> 43
<212> PRT
<213> Caenorhabditis elegans

<400> 77
Asp Ile Leu Lys Gly Leu Glu Tyr Ile His Ala Ser Ala Ile Asp Phe
 1               5                  10                 15
His Gly Asn Leu Thr Leu His Asn Cys Met Leu Asp Ser His Trp Ile
            20                  25                 30
Val Lys Leu Ser Gly Phe Gly Val Asn Arg Leu
        35                  40


<210> 78
<211> 15
<212> PRT
<213> Caenorhabditis elegans

<400> 78
Asp Met Tyr Ser Phe Gly Val Ile Leu His Glu Ile Ile Leu Lys
 1               5                  10                 15


<210> 79
<211> 67
<212> PRT
<213> Caenorhabditis elegans

<400> 79
Ala Ile Lys Ile Asn Val Asp Asp Pro Ala Ser Thr Glu Asn Leu Asn
 1               5                  10                 15
Tyr Leu Met Glu Ala Asn Ile Met Lys Asn Phe Lys Thr Asn Phe Ile
            20                  25                 30
Val Gln Leu Tyr Gly Val Ile Ser Thr Val Gln Pro Ala Met Val Val
        35                 40                 45
Met Glu Met Met Asp Leu Gly Asn Leu Arg Asp Tyr Leu Arg Ser Lys
        50                  55                 60
Arg Glu Asp
65
```

-43-

<210> 80
<211> 54
<212> PRT
<213> Caenorhabditis elegans

<400> 80
Val Ile Lys Lys Pro Glu Cys Cys Glu Asn Tyr Trp Tyr Lys Val Met
1   5   10   15
Lys Met Cys Trp Arg Tyr Ser Pro Arg Asp Arg Pro Thr Phe Leu Gln
            20   25   30
Leu Val His Leu Leu Ala Ala Glu Ala Ser Pro Glu Phe Arg Asp Leu
            35   40   45
Ser Phe Val Leu Thr Asp
        50

<210> 81
<211> 69
<212> PRT
<213> Caenorhabditis elegans

<400> 81
Lys Gln Asp Ser Gly Met Ala Ser Glu Leu Lys Asp Ile Phe Ala Asn
1   5   10   15
Ile His Thr Ile Thr Gly Tyr Leu Leu Val Arg Gln Ser Ser Pro Phe
            20   25   30
Ile Ser Leu Asn Met Phe Arg Asn Leu Arg Arg Ile Glu Ala Lys Ser
            35   40   45
Leu Phe Arg Asn Leu Tyr Ala Ile Thr Val Phe Glu Asn Pro Asn Leu
        50   55   60
Lys Lys Leu Phe Asp
65

<210> 82
<211> 52
<212> PRT
<213> Caenorhabditis elegans

<400> 82
Phe Pro His Leu Arg Glu Ile Thr Gly Thr Leu Leu Val Phe Glu Thr
1   5   10   15
Glu Gly Leu Val Asp Leu Arg Lys Ile Phe Pro Asn Leu Arg Val Ile
            20   25   30
Gly Gly Arg Ser Leu Ile Gln His Tyr Ala Leu Ile Ile Tyr Arg Asn
            35   40   45
Pro Asp Leu Glu
        50

<210> 83
<211> 46
<212> PRT
<213> Caenorhabditis elegans

<400> 83
Glu Ile Gly Leu Asp Lys Leu Ser Val Ile Arg Asn Gly Gly Val Arg
1   5   10   15

-44-

```
Ile Ile Asp Asn Arg Lys Leu Cys Tyr Thr Lys Thr Ile Asp Trp Lys
            20                  25              30
His Leu Ile Thr Ser Ser Ile Asn Asp Val Val Val Asp Asn
            35                  40              45


<210> 84
<211> 36
<212> PRT
<213> Caenorhabditis elegans

<400> 84
Tyr Asn Ala Asp Asp Trp Glu Leu Arg Gln Asp Asp Val Val Leu Gly
 1               5                  10              15
Gln Gln Cys Gly Glu Gly Ser Phe Gly Lys Val Tyr Leu Gly Thr Gly
            20                  25              30
Asn Asn Val Val
            35


<210> 85
<211> 24
<212> PRT
<213> Caenorhabditis elegans

<400> 85
Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly
 1               5                  10              15
Phe Gly Glu Ala Tyr Pro Glu Arg
            20


<210> 86
<211> 13
<212> PRT
<213> Caenorhabditis elegans

<400> 86
Gly Trp Asp Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala
 1               5                  10


<210> 87
<211> 121
<212> PRT
<213> Homo sapiens

<400> 87
Glu Val Leu Glu Asp Asn Asp Tyr Gly Arg Ala Val Asp Trp Trp Gly
 1               5                  10              15
Leu Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
            20                  25              30
Asn Gln Asp His Glu Lys Leu Phe Glu Leu Ile Leu Met Glu Glu Ile
            35                  40              45
Arg Phe Pro Arg Thr Leu Gly Pro Glu Ala Lys Ser Leu Leu Ser Gly
     50                  55                  60
Leu Leu Lys Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Ser Glu Asp
65                  70                  75                  80
```

-45-

```
Ala Lys Glu Ile Met Gln His Arg Phe Phe Ala Asn Ile Val Trp Gln
                85                      90                  95
Asp Val Tyr Glu Lys Lys Leu Ser Pro Pro Phe Lys Pro Gln Val Thr
           100                 105                 110
Ser Glu Thr Asp Thr Arg Tyr Phe Asp
           115                 120


<210> 88
<211> 121
<212> PRT
<213> Caenorhabditis elegans

<400> 88
Gln Val Leu Asp Asp His Asp Tyr Gly Arg Cys Val Asp Trp Trp Gly
 1               5                  10                  15
Val Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
            20                  25                  30
Ser Lys Asp His Asn Lys Leu Phe Glu Leu Ile Met Ala Gly Asp Leu
            35                  40                  45
Arg Phe Pro Ser Lys Leu Ser Gln Glu Ala Arg Thr Leu Leu Thr Gly
        50                  55                  60
Leu Leu Val Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Pro Glu Asp
65                  70                  75                  80
Ala Leu Glu Ile Cys Arg Ala Asp Phe Phe Arg Thr Val Asp Trp Glu
                85                  90                  95
Ala Thr Tyr Arg Lys Glu Ile Glu Pro Pro Tyr Lys Pro Asn Val Gln
           100                 105                 110
Ser Glu Thr Asp Thr Ser Tyr Phe Asp
           115                 120


<210> 89
<211> 66
<212> PRT
<213> Homo sapiens

<400> 89
Thr Met Asn Glu Phe Glu Tyr Leu Lys Leu Leu Gly Lys Gly Thr Phe
 1               5                  10                  15
Gly Lys Val Ile Leu Val Lys Glu Lys Ala Thr Gly Arg Tyr Tyr Ala
            20                  25                  30
Met Lys Ile Leu Lys Lys Glu Val Ile Val Ala Lys Asp Glu Val Ala
            35                  40                  45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Asn Ser Arg His Pro Phe
        50                  55                  60
Leu Thr
65


<210> 90
<211> 66
<212> PRT
<213> Caenorhabditis elegans

<400> 90
Thr Met Glu Asp Phe Asp Phe Leu Lys Val Leu Gly Lys Gly Thr Phe
 1               5                  10                  15
```

```
Gly Lys Val Ile Leu Cys Lys Glu Lys Arg Thr Gln Lys Leu Tyr Ala
          20                      25                  30
Ile Lys Ile Leu Lys Lys Asp Val Ile Ile Ala Arg Glu Glu Val Ala
          35                      40                  45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Arg Cys Lys His Pro Phe
          50                      55                  60
Leu Thr
65


<210> 91
<211> 45
<212> PRT
<213> Homo sapiens


<400> 91
Lys Leu Glu Asn Leu Met Leu Asp Lys Asp Gly His Ile Lys Ile Thr
1                   5                   10                  15
Asp Phe Gly Leu Cys Lys Glu Gly Ile Lys Asp Gly Ala Thr Met Lys
          20                      25                  30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
          35                      40                  45


<210> 92
<211> 45
<212> PRT
<213> Caenorhabditis elegans


<400> 92
Lys Leu Glu Asn Leu Leu Leu Asp Lys Asp Gly His Ile Lys Ile Ala
1                   5                   10                  15
Asp Phe Gly Leu Cys Lys Glu Glu Ile Ser Phe Gly Asp Lys Thr Ser
          20                      25                  30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
          35                      40                  45


<210> 93
<211> 57
<212> PRT
<213> Homo sapiens


<400> 93
Phe Leu Thr Ala Leu Lys Tyr Ser Phe Gln Thr His Asp Arg Leu Cys
1                   5                   10                  15
Phe Val Met Glu Tyr Ala Asn Gly Gly Glu Leu Phe Phe His Leu Ser
          20                      25                  30
Arg Glu Arg Val Phe Ser Glu Asp Arg Ala Arg Phe Tyr Gly Ala Glu
          35                      40                  45
Ile Val Ser Ala Leu Asp Tyr Leu His
          50                      55


<210> 94
<211> 57
<212> PRT
<213> Caenorhabditis elegans
```

-47-

<400> 94
Tyr Phe Gln Glu Leu Lys Tyr Ser Phe Gln Glu Gln His Tyr Leu Cys
1   5   10   15
Phe Val Met Gln Phe Ala Asn Gly Gly Glu Leu Phe Thr His Val Arg
            20   25   30
Lys Cys Gly Thr Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ala Glu
            35   40   45
Ile Val Leu Ala Leu Gly Tyr Leu His
    50   55

<210> 95
<211> 59
<212> PRT
<213> Homo sapiens

<400> 95
Asn Asn Phe Ser Val Ala Gln Cys Gln Leu Met Lys Thr Glu Arg Pro
1   5   10   15
Arg Pro Asn Thr Phe Ile Ile Arg Cys Leu Gln Trp Thr Thr Val Ile
            20   25   30
Glu Arg Thr Phe His Val Glu Thr Pro Glu Glu Arg Glu Glu Trp Ala
            35   40   45
Thr Ala Ile Gln Thr Val Ala Asp Gly Leu Lys
    50   55

<210> 96
<211> 59
<212> PRT
<213> Caenorhabditis elegans

<400> 96
Ser Thr Phe Ala Ile Phe Tyr Phe Gln Thr Met Leu Phe Glu Lys Pro
1   5   10   15
Arg Pro Asn Met Phe Met Val Arg Cys Leu Gln Trp Thr Thr Val Ile
            20   25   30
Glu Arg Thr Phe Tyr Ala Glu Ser Ala Glu Val Arg Gln Arg Trp Ile
            35   40   45
His Ala Ile Glu Ser Ile Ser Lys Lys Tyr Lys
    50   55

<210> 97
<211> 33
<212> PRT
<213> Homo sapiens

<400> 97
Leu Thr Ala Leu Lys Tyr Ser Phe Gln Thr His Asp Arg Leu Cys Phe
1   5   10   15
Val Met Glu Tyr Ala Asn Gly Gly Glu Leu Phe Phe His Leu Ser Arg
            20   25   30
Glu

<210> 98

-48-

```
<211> 33
<212> PRT
<213> Caenorhabditis elegans

<400> 98
Leu Gln Glu Leu Lys Tyr Ser Phe Gln Thr Asn Asp Arg Leu Cys Phe
 1               5                  10                  15
Val Met Glu Phe Ala Ile Gly Gly Asp Leu Tyr Tyr His Leu Asn Arg
            20                  25                  30
Glu


<210> 99
<211> 473
<212> PRT
<213> Homo sapiens

<400> 99
Met Leu Gly Thr Val Lys Met Glu Gly His Glu Thr Ser Asp Trp Asn
 1               5                  10                  15
Ser Tyr Tyr Ala Asp Thr Gln Glu Ala Tyr Ser Ser Val Pro Val Ser
            20                  25                  30
Asn Met Asn Ser Gly Leu Gly Ser Met Asn Ser Met Asn Thr Tyr Met
            35                  40                  45
Thr Met Asn Thr Met Thr Thr Ser Gly Asn Met Thr Pro Ala Ser Phe
        50                  55                  60
Asn Met Ser Tyr Ala Asn Pro Ala Leu Gly Ala Gly Leu Ser Pro Gly
65                  70                  75                  80
Ala Val Ala Gly Met Pro Gly Gly Ser Ala Gly Ala Met Asn Ser Met
                85                  90                  95
Thr Ala Ala Gly Val Thr Ala Met Gly Thr Ala Leu Ser Pro Ser Gly
                100                 105                 110
Met Gly Ala Met Gly Ala Gln Gln Ala Ala Ser Met Met Asn Gly Leu
            115                 120                 125
Gly Pro Tyr Ala Ala Ala Met Asn Pro Cys Met Ser Pro Met Ala Tyr
            130                 135                 140
Ala Pro Ser Asn Leu Gly Arg Ser Arg Ala Gly Gly Gly Gly Asp Ala
145                 150                 155                 160
Lys Thr Phe Lys Arg Ser Tyr Pro His Ala Lys Pro Pro Tyr Ser Tyr
                165                 170                 175
Ile Ser Leu Ile Thr Met Ala Ile Gln Arg Ala Pro Ser Lys Met Leu
                180                 185                 190
Thr Leu Ser Glu Ile Tyr Gln Trp Ile Met Asp Leu Phe Pro Tyr Tyr
            195                 200                 205
Arg Gln Asn Gln Gln Arg Trp Gln Asn Ser Ile Arg His Ser Leu Ser
    210                 215                 220
Phe Asn Asp Cys Phe Val Lys Val Ala Arg Ser Pro Asp Lys Pro Gly
225                 230                 235                 240
Lys Gly Ser Tyr Trp Thr Leu His Pro Asp Ser Gly Asn Met Phe Glu
                245                 250                 255
Asn Gly Cys Tyr Leu Arg Arg Gln Lys Arg Phe Lys Cys Glu Lys Gln
                260                 265                 270
Pro Gly Ala Gly Gly Gly Gly Ser Gly Ser Gly Gly Ser Gly Ala
            275                 280                 285
Lys Gly Gly Pro Glu Ser Arg Lys Asp Pro Ser Gly Ala Ser Asn Pro
    290                 295                 300
Ser Ala Asp Ser Pro Leu His Arg Gly Val His Gly Lys Thr Gly Gln
```

-49-

```
     305                      310                      315                      320
Leu Glu Gly Ala Pro Ala Pro Gly Pro Ala Ala Ser Pro Gln Thr Leu
                     325                  330                  335
Asp His Ser Gly Ala Thr Ala Thr Gly Gly Ala Ser Glu Leu Lys Thr
                 340                  345                  350
Pro Ala Ser Ser Thr Ala Pro Pro Ile Ser Ser Gly Pro Gly Ala Leu
             355                  360                  365
Ala Ser Val Pro Ala Ser His Pro Ala His Gly Leu Ala Pro His Glu
         370                  375                  380
Ser Gln Leu His Leu Lys Gly Asp Pro His Tyr Ser Phe Asn His Pro
     385                  390                  395                  400
Phe Ser Ile Asn Asn Leu Met Ser Ser Ser Glu Gln Gln His Lys Leu
                 405                  410                  415
Asp Phe Lys Ala Tyr Glu Gln Ala Leu Gln Tyr Ser Pro Tyr Gly Ser
             420                  425                  430
Thr Leu Pro Ala Ser Leu Pro Leu Gly Ser Ala Ser Val Thr Thr Arg
             435                  440                  445
Ser Pro Ile Glu Pro Ser Ala Leu Glu Pro Ala Tyr Tyr Gln Gly Val
     450                  455                  460
Tyr Ser Arg Pro Val Leu Asn Thr Ser
465                  470


<210> 100
<211> 347
<212> PRT
<213> Homo sapiens

<400> 100
Met Leu Gly Ser Val Lys Met Glu Ala His Asp Leu Ala Glu Trp Ser
 1               5                  10                  15
Tyr Tyr Pro Glu Ala Gly Glu Val Tyr Ser Pro Val Thr Pro Val Pro
             20                  25                  30
Thr Met Ala Pro Leu Asn Ser Tyr Met Thr Leu Asn Pro Leu Ser Ser
         35                  40                  45
Pro Tyr Pro Gly Gly Leu Pro Ala Ser Pro Leu Pro Ser Gly Pro Leu
     50                  55                  60
Ala Pro Pro Ala Pro Ala Ala Pro Leu Gly Pro Thr Phe Pro Gly Leu
65                  70                  75                  80
Gly Leu Ser Gly Gly Ser Ser Ser Ser Gly Tyr Gly Ala Pro Gly Pro
                 85                  90                  95
Gly Leu Val His Gly Lys Glu Met Pro Lys Gly Tyr Arg Ala Pro Ala
             100                 105                 110
His Ala Lys Pro Pro Tyr Ser Tyr Ile Ser Leu Ile Thr Met Ala Ile
         115                 120                 125
Gln Gln Ala Pro Gly Lys Val Leu Thr Leu Ser Glu Ile Tyr Gln Trp
     130                 135                 140
Ile Met Asp Leu Phe Pro Tyr Tyr Arg Asp Asn Gln Gln Arg Trp Gln
145                 150                 155                 160
Asn Ser Ile Arg His Ser Leu Ser Phe Asn Asp Cys Phe Val Lys Val
             165                 170                 175
Ala Arg Ser Pro Asp Lys Pro Gly Lys Gly Ser Tyr Trp Ala Leu His
             180                 185                 190
Pro Ser Ser Gly Asn Met Phe Glu Asn Gly Cys Tyr Leu Arg Arg Gln
         195                 200                 205
Lys Arg Phe Lys Leu Glu Glu Lys Val Lys Lys Gly Gly Ser Gly Ala
     210                 215                 220
Ser Thr Thr Arg Asn Gly Thr Gly Ser Ala Ala Ser Thr Thr Thr Pro
```

```
225                     230                     235                     240
Ala Ala Thr Val Thr Ser Pro Pro Gln Pro Pro Pro Ala Pro Glu
                    245                 250             255
Pro Glu Ala Gln Gly Gly Glu Asp Val Gly Ala Leu Asp Cys Gly Ser
                260                 265                 270
Pro Ala Ser Ser Thr Pro Tyr Phe Thr Gly Leu Glu Leu Pro Gly Asp
            275                 280                 285
Leu Lys Leu Asp Ala Pro Tyr Asn Phe Asn His Pro Phe Ser Ile Asn
        290                 295                 300
Asn Leu Met Ser Glu Gln Thr Pro Ala Pro Pro Lys Leu Asp Val Gly
    305                 310                 315                 320
Phe Gly Gly Tyr Gly Ala Glu Gly Gly Glu Pro Gly Val Tyr Tyr Gln
                325                 330                 335
Gly Leu Tyr Ser Arg Ser Leu Leu Asn Ala Ser
                340                 345
```

<210> 101
<211> 635
<212> PRT
<213> Caenorhabditis elegans

<400> 101
```
Met Met Glu Met Leu Val Asp Gln Gly Thr Asp Ala Ser Ser Ser Ala
  1               5                   10                  15
Ser Thr Ser Thr Ser Ser Val Ser Arg Phe Gly Ala Asp Thr Phe Met
                20                  25                  30
Asn Thr Pro Asp Asp Val Met Met Asn Asp Asp Met Glu Pro Ile Pro
            35                  40                  45
Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln Leu Glu Pro
        50                  55                  60
Pro Leu Asn Ser Ser Pro Ile Ile His Glu Gln Ile Pro Glu Glu Asp
65                  70                  75                  80
Ala Asp Leu Tyr Gly Ser Asn Glu Gln Cys Gly Gln Leu Gly Gly Ala
                85                  90                  95
Ser Ser Asn Gly Ser Thr Ala Met Leu His Thr Pro Asp Gly Ser Asn
            100                 105                 110
Ser His Gln Thr Ser Phe Pro Ser Glu Cys Tyr Thr Trp Pro Met Gln
        115                 120                 125
Gln Tyr Ile Tyr Gln Glu Ser Ser Ala Thr Ile Pro His His His Leu
    130                 135                 140
Asn Gln His Asn Asn Pro Tyr His Pro Met His Pro His His Gln Leu
145                 150                 155                 160
Pro His Met Gln Gln Leu Pro Gln Pro Leu Leu Asn Leu Asn Met Thr
                165                 170                 175
Thr Leu Thr Ser Ser Gly Ser Ser Val Ala Ser Ser Ile Gly Gly Gly
            180                 185                 190
Ala Gln Cys Ser Pro Cys Ala Ser Gly Ser Ser Thr Ala Ala Thr Asn
        195                 200                 205
Ser Ser Gln Gln Gln Gln Thr Val Gly Gln Met Leu Ala Ala Ser Val
    210                 215                 220
Pro Cys Ser Ser Ser Gly Met Thr Leu Gly Met Ser Leu Asn Leu Ser
225                 230                 235                 240
Gln Gly Gly Gly Pro Met Pro Ala Lys Lys Arg Cys Arg Lys Lys
                245                 250                 255
Pro Thr Asp Gln Leu Ala Gln Lys Lys Pro Asn Pro Trp Gly Glu Glu
            260                 265                 270
Ser Tyr Ser Asp Ile Ile Ala Lys Ala Leu Glu Ser Ala Pro Asp Gly
```

-51-

Arg Leu Lys Leu Asn Glu Ile Tyr Gln Trp Phe Ser Asp Asn Ile Pro
    290   295   300
Tyr Phe Gly Glu Arg Ser Ser Pro Glu Glu Ala Ala Gly Trp Lys Asn
305   310   315   320
Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln
                   325   330   335
Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala
              340   345   350
Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser Asn Thr Ile
         355   360   365
Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg Gly Ala Lys
    370   375   380
Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His Ser Thr Leu
385   390   395   400
Asn Gly Asn Ser Ile Ala Gly Ser Ile Gln Thr Ile Ser His Asp Leu
                   405   410   415
Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val Pro Ser Ser
              420   425   430
Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly Ser Ser Ser
         435   440   445
Arg Val Ser Pro Ala Ile Gly Ser Asp Ile Tyr Asp Asp Leu Glu Phe
    450   455   460
Pro Ser Trp Val Gly Glu Ser Val Pro Ala Ile Pro Ser Asp Ile Val
465   470   475   480
Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His Ile Gly Gly
                   485   490   495
Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu Pro Ile Ala
              500   505   510
Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly Ser Cys Ala
         515   520   525
Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr Asn Phe Lys
    530   535   540
Pro Met Pro Leu Pro Gly Ala Tyr Gly Asn Tyr Gln Asn Gly Gly Ile
545   550   555   560
Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro Leu Pro Gly
                   565   570   575
Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val Ala Ser Ser
              580   585   590
Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro Asp Gln Pro
         595   600   605
Leu Met Asp Thr Met Asp Val Asp Ala Leu Ile Arg His Glu Leu Ser
    610   615   620
Gln Ala Gly Gly Gln His Ile His Phe Asp Leu
625   630   635

<210> 102
<211> 501
<212> PRT
<213> Homo sapiens

<400> 102
Met Arg Ile Gln Pro Gln Lys Ala Ala Ala Ile Ile Asp Leu Asp Pro
 1   5   10   15
Asp Phe Glu Pro Gln Ser Arg Pro Arg Ser Cys Thr Trp Pro Leu Pro
              20   25   30
Arg Pro Glu Ile Ala Asn Gln Pro Ser Glu Pro Pro Glu Val Glu Pro

-52-

```
                35                          40                          45
Asp Leu Gly Glu Lys Val His Thr Glu Gly Arg Ser Glu Pro Ile Leu
    50                      55                      60
Leu Pro Ser Arg Leu Ser Glu Pro Ala Gly Gly Pro Gln Pro Gly Ile
65                      70                      75                      80
Leu Gly Ala Val Thr Gly Pro Arg Lys Gly Gly Ser Arg Arg Asn Ala
                85                      90                      95
Trp Gly Asn Gln Ser Tyr Ala Glu Phe Ile Ser Gln Ala Ile Glu Ser
            100                     105                     110
Ala Pro Glu Lys Arg Leu Thr Leu Ala Gln Ile Tyr Glu Trp Met Val
            115                     120                     125
Arg Thr Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala
    130                     135                     140
Gly Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe
145                     150                     155                     160
Ile Lys Val His Asn Glu Ala Thr Gly Lys Ser Ser Trp Trp Met Leu
                165                     170                     175
Asn Pro Glu Gly Gly Lys Ser Gly Lys Ala Pro Arg Arg Arg Ala Ala
            180                     185                     190
Ser Met Asp Ser Ser Ser Lys Leu Leu Arg Gly Arg Ser Lys Ala Pro
            195                     200                     205
Lys Lys Lys Pro Ser Val Leu Pro Ala Pro Pro Glu Gly Ala Thr Pro
    210                     215                     220
Thr Ser Pro Val Gly His Phe Ala Lys Trp Ser Gly Ser Pro Cys Ser
225                     230                     235                     240
Arg Asn Arg Glu Glu Ala Asp Met Trp Thr Thr Phe Arg Pro Arg Ser
                245                     250                     255
Ser Ser Asn Ala Ser Ser Val Ser Thr Arg Leu Ser Pro Leu Arg Pro
            260                     265                     270
Glu Ser Glu Val Leu Ala Glu Glu Ile Pro Ala Ser Val Ser Ser Tyr
            275                     280                     285
Ala Gly Gly Val Pro Pro Thr Leu Asn Glu Gly Leu Glu Leu Leu Asp
    290                     295                     300
Gly Leu Asn Leu Thr Ser Ser His Ser Leu Leu Ser Arg Ser Gly Leu
305                     310                     315                     320
Ser Gly Phe Ser Leu Gln His Pro Gly Val Thr Gly Pro Leu His Thr
                325                     330                     335
Tyr Ser Ser Ser Leu Phe Ser Pro Ala Glu Gly Pro Leu Ser Ala Gly
            340                     345                     350
Glu Gly Cys Phe Ser Ser Ser Gln Ala Leu Glu Ala Leu Leu Thr Ser
            355                     360                     365
Asp Thr Pro Pro Pro Pro Ala Asp Val Leu Met Thr Gln Val Asp Pro
    370                     375                     380
Ile Leu Ser Gln Ala Pro Thr Leu Leu Leu Leu Gly Gly Leu Pro Ser
385                     390                     395                     400
Ser Ser Lys Leu Ala Thr Gly Val Gly Leu Cys Pro Lys Pro Leu Glu
                405                     410                     415
Ala Arg Gly Pro Ser Ser Leu Val Pro Thr Leu Ser Met Ile Ala Pro
            420                     425                     430
Pro Pro Val Met Ala Ser Ala Pro Ile Pro Lys Ala Leu Gly Thr Pro
            435                     440                     445
Val Leu Thr Pro Pro Thr Glu Ala Ala Ser Gln Asp Arg Met Pro Gln
    450                     455                     460
Asp Leu Asp Leu Asp Met Tyr Met Glu Asn Leu Glu Cys Asp Met Asp
465                     470                     475                     480
Asn Ile Ile Ser Asp Leu Met Asp Glu Gly Glu Gly Leu Asp Phe Asn
                485                     490                     495
Phe Glu Pro Asp Pro
```

-53-

<210> 103
<211> 366
<212> PRT
<213> Homo sapiens

<400> 103
Arg	Gly	Ala	Ile	Arg	Ile	Glu	Lys	Asn	Ala	Asp	Leu	Cys	Tyr	Leu	Ser
1				5					10					15	
Thr	Val	Asp	Trp	Ser	Leu	Ile	Leu	Asp	Ala	Val	Ser	Asn	Asn	Tyr	Ile
			20					25					30		
Val	Gly	Asn	Lys	Pro	Pro	Lys	Glu	Cys	Gly	Asp	Leu	Cys	Pro	Gly	Thr
		35					40					45			
Met	Glu	Glu	Lys	Pro	Met	Cys	Glu	Lys	Thr	Thr	Ile	Asn	Asn	Glu	Tyr
	50					55					60				
Asn	Tyr	Arg	Cys	Trp	Thr	Thr	Asn	Arg	Cys	Gln	Lys	Met	Cys	Pro	Ser
65					70					75					80
Thr	Cys	Gly	Lys	Arg	Ala	Cys	Thr	Glu	Asn	Asn	Glu	Cys	Cys	His	Pro
			85					90					95		
Glu	Cys	Leu	Gly	Ser	Cys	Ser	Ala	Pro	Asp	Asn	Asp	Thr	Ala	Cys	Val
			100					105					110		
Ala	Cys	Arg	His	Tyr	Tyr	Tyr	Ala	Gly	Val	Cys	Val	Pro	Ala	Cys	Pro
		115					120					125			
Pro	Asn	Thr	Tyr	Arg	Phe	Glu	Gly	Trp	Arg	Cys	Val	Asp	Arg	Asp	Phe
	130					135					140				
Cys	Ala	Asn	Ile	Leu	Ser	Ala	Glu	Ser	Ser	Asp	Ser	Glu	Gly	Phe	Val
145					150					155					160
Ile	His	Asp	Gly	Glu	Cys	Met	Gln	Glu	Cys	Pro	Ser	Gly	Phe	Ile	Arg
			165					170					175		
Asn	Gly	Ser	Gln	Ser	Met	Tyr	Cys	Ile	Pro	Cys	Glu	Gly	Pro	Cys	Pro
			180					185					190		
Lys	Val	Cys	Glu	Glu	Glu	Lys	Lys	Thr	Lys	Thr	Ile	Asp	Ser	Val	Thr
		195					200					205			
Ser	Ala	Gln	Met	Leu	Gln	Gly	Cys	Thr	Ile	Phe	Lys	Gly	Asn	Leu	Leu
	210					215					220				
Ile	Asn	Ile	Arg	Arg	Gly	Asn	Asn	Ile	Ala	Ser	Glu	Leu	Glu	Asn	Phe
225					230					235					240
Met	Gly	Leu	Ile	Glu	Val	Val	Thr	Gly	Tyr	Val	Lys	Ile	Arg	His	Ser
			245					250					255		
His	Ala	Leu	Val	Ser	Leu	Ser	Phe	Leu	Lys	Asn	Leu	Arg	Leu	Ile	Leu
			260					265					270		
Gly	Glu	Glu	Gln	Leu	Glu	Gly	Asn	Tyr	Ser	Phe	Tyr	Val	Leu	Asp	Asn
		275					280					285			
Gln	Asn	Leu	Gln	Gln	Leu	Trp	Asp	Trp	Asp	His	Arg	Asn	Leu	Thr	Ile
	290					295					300				
Lys	Ala	Gly	Lys	Met	Tyr	Phe	Ala	Phe	Asn	Pro	Lys	Leu	Cys	Val	Ser
305					310					315					320
Glu	Ile	Tyr	Arg	Met	Glu	Glu	Val	Thr	Gly	Thr	Lys	Gly	Arg	Gln	Ser
			325					330					335		
Lys	Gly	Asp	Ile	Asn	Thr	Arg	Asn	Asn	Gly	Glu	Arg	Ala	Ser	Cys	Glu
			340					345					350		
Ser	Asp	Val	Leu	His	Phe	Thr	Ser	Thr	Thr	Thr	Ser	Lys	Asn		
		355					360					365			

<210> 104

```
Arg Gly Ser Val Arg Ile Glu Lys Asn Asn Glu Leu Cys Tyr Leu Ala
 1               5                  10                  15
Thr Ile Asp Trp Ser Arg Ile Leu Asp Ser Val Glu Asp Asn Tyr Ile
            20                  25                  30
Val Leu Asn Lys Asp Asp Asn Glu Glu Cys Gly Asp Ile Cys Pro Gly
            35                  40                  45
Thr Ala Lys Gly Lys Thr Asn Cys Pro Ala Thr Val Ile Asn Gly Gln
    50                  55                  60
Phe Val Glu Arg Cys Trp Thr His Ser His Cys Gln Lys Val Cys Pro
65                  70                  75                  80
Thr Ile Cys Lys Ser His Gly Cys Thr Ala Glu Gly Leu Cys Cys His
                85                  90                  95
Ser Glu Cys Leu Gly Asn Cys Ser Gln Pro Asp Asp Pro Thr Lys Cys
                100                 105                 110
Val Ala Cys Arg Asn Phe Tyr Leu Asp Gly Arg Cys Val Glu Thr Cys
            115                 120                 125
Pro Pro Pro Tyr Tyr His Phe Gln Asp Trp Arg Cys Val Asn Phe Ser
    130                 135                 140
Phe Cys Gln Asp Leu His His Lys Cys Lys Asn Ser Arg Arg Gln Gly
145                 150                 155                 160
Cys His Gln Tyr Val Ile His Asn Asn Lys Cys Ile Pro Glu Cys Pro
                165                 170                 175
Ser Gly Tyr Thr Met Asn Ser Ser Asn Leu Leu Cys Thr Pro Cys Leu
                180                 185                 190
Gly Pro Cys Pro Lys Val Cys His Leu Leu Glu Gly Glu Lys Thr Ile
            195                 200                 205
Asp Ser Val Thr Ser Ala Gln Glu Leu Arg Gly Cys Thr Val Ile Asn
    210                 215                 220
Gly Ser Leu Ile Ile Asn Ile Arg Gly Gly Asn Asn Leu Ala Ala Glu
225                 230                 235                 240
Leu Glu Ala Asn Leu Gly Leu Ile Glu Glu Ile Ser Gly Tyr Leu Lys
            245                 250                 255
Ile Arg Arg Ser Tyr Ala Leu Val Ser Leu Ser Phe Phe Arg Lys Leu
            260                 265                 270
Arg Leu Ile Arg Gly Glu Thr Leu Glu Ile Gly Asn Tyr Ser Phe Tyr
            275                 280                 285
Ala Leu Asp Asn Gln Asn Leu Arg Gln Leu Trp Asp Trp Ser Lys His
    290                 295                 300
Asn Leu Thr Ile Thr Gln Gly Lys Leu Phe Phe His Tyr Asn Pro Lys
305                 310                 315                 320
Leu Cys Leu Ser Glu Ile His Lys Met Glu Glu Val Ser Gly Thr Lys
            325                 330                 335
Gly Arg Gln Glu Arg Asn Asp Ile Ala Leu Lys Thr Asn Gly Asp Gln
            340                 345                 350
Ala Ser Cys Glu Asn Glu Leu Leu Lys Phe Ser Tyr Ile Arg Thr Ser
            355                 360                 365
Phe Asp
370
```

<213> Drosophila melanogaster

<400> 105
Arg Gly Gly Val Arg Ile Glu Lys Asn His Lys Leu Cys Tyr Asp Arg
1   5   10   15
Thr Ile Asp Trp Leu Glu Ile Leu Ala Glu Asn Glu Ser Gln Leu Val
            20   25   30
Val Leu Thr Glu Asn Gly Lys Glu Lys Glu Cys Ser Leu Ser Lys Cys
            35   40   45
Pro Gly Glu Ile Arg Ile Glu Glu Gly His Asp Asn Thr Ala Ile Glu
    50   55   60
Gly Glu Leu Asn Ala Ser Cys Gln Leu His Asn Asn Arg Arg Leu Cys
65   70   75   80
Trp Asn Ser Lys Leu Cys Gln Thr Lys Cys Pro Glu Lys Cys Arg Asn
                85   90   95
Asn Cys Ile Asp Glu His Thr Cys Cys Ser Gln Asp Cys Leu Gly Gly
            100   105   110
Cys Val Ile Asp Lys Asn Gly Asn Glu Ser Cys Ile Ser Cys Arg Asn
        115   120   125
Val Ser Phe Asn Asn Ile Cys Met Asp Ser Cys Pro Lys Gly Tyr Tyr
    130   135   140
Gln Phe Asp Ser Arg Cys Val Thr Ala Asn Glu Cys Ile Thr Leu Thr
145   150   155   160
Lys Phe Glu Thr Asn Ser Val Tyr Ser Gly Ile Pro Tyr Asn Gly Gln
                165   170   175
Cys Ile Thr His Cys Pro Thr Gly Tyr Gln Lys Ser Glu Asn Lys Arg
            180   185   190
Met Cys Glu Pro Cys Pro Gly Gly Lys Cys Asp Lys Glu Cys Ser Ser
            195   200   205
Gly Leu Ile Asp Ser Leu Glu Arg Ala Arg Glu Phe His Gly Cys Thr
    210   215   220
Ile Ile Thr Gly Thr Glu Pro Leu Thr Ile Ser Ile Lys Arg Glu Ser
225   230   235   240
Gly Ala His Val Met Asp Glu Leu Lys Tyr Gly Leu Ala Ala Val His
            245   250   255
Lys Ile Gln Ser Ser Leu Met Val His Leu Thr Tyr Gly Leu Lys Ser
            260   265   270
Leu Lys Phe Phe Gln Ser Leu Thr Glu Ile Ser Gly Asp Pro Pro Met
            275   280   285
Asp Ala Asp Lys Tyr Ala Leu Tyr Val Leu Asp Asn Arg Asp Leu Asp
    290   295   300
Glu Leu Trp Gly Pro Asn Gln Thr Val Phe Ile Arg Lys Gly Gly Val
305   310   315   320
Phe Phe His Phe Asn Pro Lys Leu Cys Val Ser Thr Ile Asn Gln Leu
            325   330   335
Leu Pro Met Leu Ala Ser Lys Pro Lys Phe Phe Glu Lys Ser Asp Glu
            340   345   350
Gly Ala Asp Ser Asn Gly Asn Arg Gly Ser Cys Gly Thr Ala Val Leu
            355   360   365
Asn Val Thr Leu Gln Ser Val Gly Ala Asn Ser Ala Ser Leu Asn
    370   375   380

<210> 106
<211> 381
<212> PRT
<213> Caenorhabditis elegans

-56-

<400> 106

```
Asn Gly Gly Val Arg Ile Ile Asp Asn Arg Lys Leu Cys Tyr Thr Lys
 1           5               10              15
Thr Ile Asp Trp Lys His Leu Ile Thr Ser Ser Ile Asn Asp Val Val
            20              25              30
Val Asp Asn Ala Ala Glu Tyr Ala Val Thr Glu Thr Gly Leu Met Cys
        35              40              45
Pro Arg Gly Ala Cys Glu Glu Asp Lys Gly Glu Ser Lys Cys His Tyr
    50              55              60
Leu Glu Glu Lys Asn Gln Glu Gln Gly Val Glu Arg Val Gln Ser Cys
65              70              75              80
Trp Ser Asn Thr Thr Cys Gln Lys Ser Cys Ala Tyr Asp Arg Leu Leu
            85              90              95
Pro Thr Lys Glu Ile Gly Pro Gly Cys Asp Ala Asn Gly Asp Arg Cys
            100             105             110
His Asp Gln Cys Val Gly Gly Cys Glu Arg Val Asn Asp Ala Thr Ala
        115             120             125
Cys His Ala Cys Lys Asn Val Tyr His Lys Gly Lys Cys Ile Glu Lys
    130             135             140
Cys Asp Ala His Leu Tyr Leu Leu Leu Gln Arg Arg Cys Val Thr Arg
145             150             155             160
Glu Gln Cys Leu Gln Leu Asn Pro Val Leu Ser Asn Lys Thr Val Pro
            165             170             175
Ile Lys Ala Thr Ala Gly Leu Cys Ser Asp Lys Cys Pro Asp Gly Tyr
            180             185             190
Gln Ile Asn Pro Asp Asp His Arg Glu Cys Arg Lys Cys Val Gly Lys
        195             200             205
Cys Glu Ile Val Cys Glu Ile Asn His Val Ile Asp Thr Phe Pro Lys
    210             215             220
Ala Gln Ala Ile Arg Leu Cys Asn Ile Ile Asp Gly Asn Leu Thr Ile
225             230             235             240
Glu Ile Arg Gly Lys Gln Asp Ser Gly Met Ala Ser Glu Leu Lys Asp
            245             250             255
Ile Phe Ala Asn Ile His Thr Ile Thr Gly Tyr Leu Leu Val Arg Gln
            260             265             270
Ser Ser Pro Phe Ile Ser Leu Asn Met Phe Arg Asn Leu Arg Arg Ile
            275             280             285
Glu Ala Lys Ser Leu Phe Arg Asn Leu Tyr Ala Ile Thr Val Phe Glu
    290             295             300
Asn Pro Asn Leu Lys Lys Leu Phe Asp Ser Thr Thr Asp Leu Thr Leu
305             310             315             320
Asp Arg Gly Thr Val Ser Ile Ala Asn Asn Lys Met Leu Cys Phe Lys
            325             330             335
Tyr Ile Lys Gln Leu Met Ser Lys Leu Asn Ile Pro Leu Asp Pro Ile
            340             345             350
Asp Gln Ser Glu Gly Thr Asn Gly Glu Lys Ala Ile Cys Glu Asp Met
            355             360             365
Ala Ile Asn Val Ser Ile Thr Ala Val Asn Ala Asp Ser
    370             375             380
```

<210> 107
<211> 370
<212> PRT
<213> Homo sapiens

<400> 107

```
Ala Leu Pro Val Ala Val Leu Leu Ile Val Gly Gly Leu Val Ile Met
```

-57-

```
        1                   5                        10                       15
Leu Tyr Val Phe His Arg Lys Arg Asn Asn Ser Arg Leu Gly Asn Gly
                20                      25                  30
Val Leu Tyr Ala Ser Val Asn Pro Glu Tyr Phe Ser Ala Ala Asp Val
                35                      40                  45
Tyr Val Pro Asp Glu Trp Glu Val Ala Arg Glu Lys Ile Thr Met Ser
        50                      55                  60
Arg Glu Leu Gly Gln Gly Ser Phe Gly Met Val Tyr Glu Gly Val Ala
65                      70                  75                  80
Lys Gly Val Val Lys Asp Glu Pro Glu Thr Arg Val Ala Ile Lys Thr
                85                      90                  95
Val Asn Glu Ala Ala Ser Met Arg Glu Arg Ile Glu Phe Leu Asn Glu
                100                     105                 110
Ala Ser Val Met Lys Glu Phe Asn Cys His His Val Val Arg Leu Leu
                115                     120                 125
Gly Val Val Ser Gln Gly Gln Pro Thr Leu Val Ile Met Glu Leu Met
        130                     135                 140
Thr Arg Gly Asp Leu Lys Ser Tyr Leu Arg Ser Leu Arg Pro Glu Met
145                     150                     155                 160
Glu Asn Asn Pro Val Leu Ala Pro Pro Ser Leu Ser Lys Met Ile Gln
                165                     170                 175
Met Ala Gly Glu Ile Ala Asp Gly Met Ala Tyr Leu Asn Ala Asn Lys
                180                     185                 190
Phe Val His Arg Asp Leu Ala Ala Arg Asn Cys Met Val Ala Glu Asp
                195                     200                 205
Phe Thr Val Lys Ile Gly Asp Phe Gly Met Thr Arg Asp Ile Tyr Glu
        210                     215                 220
Thr Asp Tyr Tyr Arg Lys Gly Gly Lys Gly Leu Leu Pro Val Arg Trp
225                     230                     235                 240
Met Ser Pro Glu Ser Leu Lys Asp Gly Val Phe Thr Thr Tyr Ser Asp
                245                     250                 255
Val Trp Ser Phe Gly Val Val Leu Trp Glu Ile Ala Thr Leu Ala Glu
                260                     265                 270
Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln Val Leu Arg Phe Val Met
                275                     280                 285
Glu Gly Gly Leu Leu Asp Lys Pro Asp Asn Cys Pro Asp Met Leu Phe
        290                     295                 300
Glu Leu Met Arg Met Cys Trp Gln Tyr Asn Pro Lys Met Arg Pro Ser
305                     310                     315                 320
Phe Leu Glu Ile Ile Ser Ser Ile Lys Glu Glu Met Glu Pro Gly Phe
                325                     330                 335
Arg Glu Val Ser Phe Tyr Tyr Ser Glu Glu Asn Lys Leu Pro Glu Pro
                340                     345                 350
Glu Glu Leu Asp Leu Glu Pro Glu Asn Met Glu Ser Val Pro Leu Asp
        355                     360                 365
Pro Ser
        370


<210> 108
<211> 374
<212> PRT
<213> Homo sapiens

<400> 108
Ile Gly Pro Leu Ile Phe Val Phe Leu Phe Ser Val Val Ile Gly Ser
1                   5                       10                  15
Ile Tyr Leu Phe Leu Arg Lys Arg Gln Pro Asp Gly Pro Leu Gly Pro
```

-58-

Leu Tyr Ala Ser Ser Asn Pro Glu Tyr Leu Ser Ala Ser Asp Val Phe
        35   40   45
Pro Cys Ser Val Tyr Val Pro Asp Glu Trp Glu Val Ser Arg Glu Lys
    50   55   60
Ile Thr Leu Leu Arg Glu Leu Gly Gln Gly Ser Phe Gly Met Val Tyr
65   70   75   80
Glu Gly Asn Ala Arg Asp Ile Ile Lys Gly Glu Ala Glu Thr Arg Val
                85   90   95
Ala Val Lys Thr Val Asn Glu Ser Ala Ser Leu Arg Glu Arg Ile Glu
            100   105   110
Phe Leu Asn Glu Ala Ser Val Met Lys Gly Phe Thr Cys His His Val
            115   120   125
Val Arg Leu Leu Gly Val Val Ser Lys Gly Gln Pro Thr Leu Val Val
    130   135   140
Met Glu Leu Met Ala His Gly Asp Leu Lys Ser Tyr Leu Arg Ser Leu
145   150   155   160
Arg Pro Glu Ala Glu Asn Asn Pro Gly Arg Pro Pro Pro Thr Leu Gln
                165   170   175
Glu Met Ile Gln Met Ala Ala Glu Ile Ala Asp Gly Met Ala Tyr Leu
                180   185   190
Asn Ala Lys Lys Phe Val His Arg Asp Leu Ala Ala Arg Asn Cys Met
            195   200   205
Val Ala His Asp Phe Thr Val Lys Ile Gly Asp Phe Gly Met Thr Arg
    210   215   220
Asp Ile Tyr Glu Thr Asp Tyr Tyr Arg Lys Gly Gly Lys Gly Leu Leu
225   230   235   240
Pro Val Arg Trp Met Ala Pro Glu Ser Leu Lys Asp Gly Val Phe Thr
                245   250   255
Thr Ser Ser Asp Met Trp Ser Phe Gly Val Val Leu Trp Glu Ile Thr
                260   265   270
Ser Leu Ala Glu Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln Val Leu
            275   280   285
Lys Phe Val Met Asp Gly Gly Tyr Leu Asp Gln Pro Asp Asn Cys Pro
    290   295   300
Glu Arg Val Thr Asp Leu Met Arg Met Cys Trp Gln Phe Asn Pro Lys
305   310   315   320
Met Arg Pro Thr Phe Leu Glu Ile Val Asn Leu Leu Lys Asp Asp Leu
                325   330   335
His Pro Ser Phe Pro Glu Val Ser Phe Phe His Ser Glu Glu Asn Lys
                340   345   350
Ala Pro Glu Ser Glu Glu Leu Glu Met Glu Phe Glu Asp Met Glu Asn
            355   360   365
Val Pro Leu Asp Arg Ser
    370

<210> 109
<211> 384
<212> PRT
<213> Drosophila melanogaster

<400> 109
Gly Ile Gly Leu Ala Phe Leu Ile Val Ser Leu Phe Gly Tyr Val Cys
 1   5   10   15
Tyr Leu His Lys Arg Lys Val Pro Ser Asn Asp Leu His Met Asn Thr
                20   25   30
Glu Val Asn Pro Phe Tyr Ala Ser Met Gln Tyr Ile Pro Asp Asp Trp

```
          35                    40                    45
Glu Val Leu Arg Glu Asn Ile Ile Gln Leu Ala Pro Leu Gly Gln Gly
   50                    55                    60
Ser Phe Gly Met Val Tyr Glu Gly Ile Leu Lys Ser Phe Pro Pro Asn
65                    70                    75                    80
Gly Val Asp Arg Glu Cys Ala Ile Lys Thr Val Asn Glu Asn Ala Thr
                  85                    90                    95
Asp Arg Glu Arg Thr Asn Phe Leu Ser Glu Ala Ser Val Met Lys Glu
                 100                   105                   110
Phe Asp Thr Tyr His Val Val Arg Leu Leu Gly Val Cys Ser Arg Gly
                 115                   120                   125
Gln Pro Ala Leu Val Val Met Glu Leu Met Lys Lys Gly Asp Leu Lys
             130                   135                   140
Ser Tyr Leu Arg Ala His Arg Pro Glu Glu Arg Asp Glu Ala Met Met
145                   150                   155                   160
Thr Tyr Leu Asn Arg Ile Gly Val Thr Gly Asn Val Gln Pro Pro Thr
                 165                   170                   175
Tyr Gly Arg Ile Tyr Gln Met Ala Ile Glu Ile Ala Asp Gly Met Ala
                 180                   185                   190
Tyr Leu Ala Ala Lys Lys Phe Val His Arg Asp Leu Ala Ala Arg Asn
                 195                   200                   205
Cys Met Val Ala Asp Asp Leu Thr Val Lys Ile Gly Asp Phe Gly Met
             210                   215                   220
Thr Arg Asp Ile Tyr Glu Thr Asp Tyr Tyr Arg Lys Gly Thr Lys Gly
225                   230                   235                   240
Leu Leu Pro Val Arg Trp Met Pro Pro Glu Ser Leu Arg Asp Gly Val
                 245                   250                   255
Tyr Ser Ser Ala Ser Asp Val Phe Ser Phe Gly Val Val Leu Trp Glu
                 260                   265                   270
Met Ala Thr Leu Ala Ala Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln
             275                   280                   285
Val Leu Arg Tyr Val Ile Asp Gly Gly Val Met Glu Arg Pro Glu Asn
             290                   295                   300
Cys Pro Asp Phe Leu His Lys Leu Met Gln Arg Cys Trp His His Arg
305                   310                   315                   320
Ser Ser Ala Arg Pro Ser Phe Leu Asp Ile Ile Ala Tyr Leu Glu Pro
                 325                   330                   335
Gln Cys Pro Asn Ser Gln Phe Lys Glu Val Ser Phe Tyr His Ser Glu
             340                   345                   350
Ala Gly Leu Gln His Arg Glu Lys Glu Arg Lys Glu Arg Asn Gln Leu
             355                   360                   365
Asp Ala Phe Ala Ala Val Pro Leu Asp Gln Asp Leu Gln Asp Arg Glu
             370                   375                   380
```

```
Gly Met Leu Leu Val Phe Leu Ile Leu Met Ser Ile Ala Gly Cys Ile
 1                 5                    10                    15
Ile Tyr Tyr Tyr Ile Gln Val Arg Tyr Gly Lys Lys Val Lys Ala Leu
                  20                    25                    30
Ser Asp Phe Met Gln Leu Asn Pro Glu Tyr Cys Val Asp Asn Lys Tyr
             35                    40                    45
Asn Ala Asp Asp Trp Glu Leu Arg Gln Asp Asp Val Val Leu Gly Gln
```

```
      50                  55                      60
Gln Cys Gly Glu Gly Ser Phe Gly Lys Val Tyr Leu Gly Thr Gly Asn
65                      70                  75                  80
Asn Val Val Ser Leu Met Gly Asp Arg Phe Gly Pro Cys Ala Ile Lys
                        85                  90                  95
Ile Asn Val Asp Asp Pro Ala Ser Thr Glu Asn Leu Asn Tyr Leu Met
                100                 105                 110
Glu Ala Asn Ile Met Lys Asn Phe Lys Thr Asn Phe Ile Val Gln Leu
            115                 120                 125
Tyr Gly Val Ile Ser Thr Val Gln Pro Ala Met Val Val Met Glu Met
        130                 135                 140
Met Asp Leu Gly Asn Leu Arg Asp Tyr Leu Arg Ser Lys Arg Glu Asp
145                 150                 155                 160
Glu Val Phe Asn Glu Thr Asp Cys Asn Phe Phe Asp Ile Ile Pro Arg
                165                 170                 175
Asp Lys Phe His Glu Trp Ala Ala Gln Ile Cys Asp Gly Met Ala Tyr
                180                 185                 190
Leu Glu Ser Leu Lys Phe Cys His Arg Asp Leu Ala Ala Arg Asn Cys
            195                 200                 205
Met Ile Asn Arg Asp Glu Thr Val Lys Ile Gly Asp Phe Gly Met Ala
            210                 215                 220
Arg Asp Leu Phe Tyr His Asp Tyr Tyr Lys Pro Ser Gly Lys Arg Met
225                 230                 235                 240
Met Pro Val Arg Trp Met Ser Pro Glu Ser Leu Lys Asp Gly Lys Phe
                245                 250                 255
Asp Ser Lys Ser Asp Val Trp Ser Phe Gly Val Val Leu Tyr Glu Met
                260                 265                 270
Val Thr Leu Gly Ala Gln Pro Tyr Ile Gly Leu Ser Asn Asp Glu Val
            275                 280                 285
Leu Asn Tyr Ile Gly Met Ala Arg Lys Val Ile Lys Lys Pro Glu Cys
            290                 295                 300
Cys Glu Asn Tyr Trp Tyr Lys Val Met Lys Met Cys Trp Arg Tyr Ser
305                 310                 315                 320
Pro Arg Asp Arg Pro Thr Phe Leu Gln Leu Val His Leu Leu Ala Ala
                325                 330                 335
Glu Ala Ser Pro Glu Phe Arg Asp Leu Ser Phe Val Leu Thr Asp Asn
                340                 345                 350
Gln Met Ile Leu Asp Asp Ser Glu Ala Leu Asp Leu Asp Asp Ile Asp
            355                 360                 365
Asp Thr Asp Met Asn Asp Gln Val Val Glu Val Ala
370                 375                 380
```

<210> 111
<211> 103
<212> PRT
<213> Caenorhabditis elegans

<400> 111
```
Asn Ile Asp Arg Glu Phe Asp Gln Lys Ala Cys Glu Ser Leu Val Lys
1               5                   10                  15
Lys Leu Lys Asp Lys Lys Asn Asp Leu Gln Asn Leu Ile Asp Val Val
                20                  25                  30
Leu Ser Lys Gly Thr Lys Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr
            35                  40                  45
Leu Asp Gly Arg Leu Gln Val His Gly Arg Lys Gly Phe Pro His Val
        50                  55                  60
Val Tyr Gly Lys Leu Trp Arg Phe Asn Glu Met Thr Lys Asn Glu Thr
```

Arg His Val Asp His Cys Lys His Ala Phe Glu Met Lys Ser Asp Met
                85   90   95
Val Cys Val Asn Pro Tyr His
            100

<210> 112
<211> 104
<212> PRT
<213> Homo sapiens

<400> 112
Gly Gly Glu Ser Glu Thr Phe Ala Lys Arg Ala Ile Glu Ser Leu Val
 1   5   10   15
Lys Lys Leu Lys Glu Lys Lys Asp Glu Leu Asp Ser Leu Ile Thr Ala
            20   25   30
Ile Thr Thr Asn Gly Ala His Pro Ser Lys Cys Val Thr Ile Gln Arg
        35   40   45
Thr Leu Asp Gly Arg Leu Gln Val Ala Gly Arg Lys Gly Phe Pro His
    50   55   60
Val Ile Tyr Ala Arg Leu Trp Arg Trp Pro Asp Leu His Lys Asn Glu
65   70   75   80
Leu Lys His Val Lys Tyr Cys Gln Tyr Ala Phe Asp Leu Lys Cys Asp
                85   90   95
Ser Val Cys Val Asn Pro Tyr His
            100

<210> 113
<211> 205
<212> PRT
<213> Caenorhabditis elegans

<400> 113
Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys Lys Cys Ser
 1   5   10   15
Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser Glu Asn Arg
            20   25   30
Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val Ala Phe
            35   40   45
Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr Lys Lys
    50   55   60
Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val Phe Val
65   70   75   80
Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys Asp Lys
                85   90   95
Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe Gly Phe Asn
            100   105   110
Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys Gln Met Ala
            115   120   125
Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr Ile Tyr Glu
    130   135   140
Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg Thr Thr Asp
145   150   155   160
Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly Phe
                165   170   175
Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys Pro Val Trp

-62-

```
              180                    185                         190
Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
        195                    200                    205


<210> 114
<211> 212
<212> PRT
<213> Homo sapiens

<400> 114
Ile Ala Tyr Phe Glu Met Asp Val Gln Val Gly Glu Thr Phe Lys Val
 1               5                   10                  15
Pro Ser Ser Cys Pro Ile Val Thr Val Asp Gly Tyr Val Asp Pro Ser
            20                  25                  30
Gly Gly Asp Arg Phe Cys Leu Gly Gln Leu Ser Asn Val His Arg Thr
            35                  40                  45
Glu Ala Ile Glu Arg Ala Arg Leu His Ile Gly Lys Gly Val Gln Leu
    50                  55                  60
Glu Cys Lys Gly Glu Gly Asp Val Trp Val Arg Cys Leu Ser Asp His
65                  70                  75                  80
Ala Val Phe Val Gln Ser Tyr Tyr Leu Asp Arg Glu Ala Gly Arg Ala
                85                  90                  95
Pro Gly Asp Ala Val His Lys Ile Tyr Pro Ser Ala Tyr Ile Lys Val
            100                 105                 110
Phe Asp Leu Arg Gln Cys His Arg Gln Met Gln Gln Gln Ala Ala Thr
            115                 120                 125
Ala Gln Ala Ala Ala Ala Ala Gln Ala Ala Ala Val Ala Gly Asn Ile
    130                 135                 140
Pro Gly Pro Gly Ser Val Gly Gly Ile Ala Pro Ala Ile Ser Leu Ser
145                 150                 155                 160
Ala Ala Ala Gly Ile Gly Val Asp Asp Leu Arg Arg Leu Cys Ile Leu
                165                 170                 175
Arg Met Ser Phe Val Lys Gly Trp Gly Pro Asp Tyr Pro Arg Gln Ser
            180                 185                 190
Ile Lys Glu Thr Pro Cys Trp Ile Glu Ile His Leu His Arg Ala Leu
            195                 200                 205
Gln Leu Leu Asp
    210
```